

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

IN THE MATTER OF:

Universal Oil Products Superfund Site

Honeywell International Inc.

Respondent.

Proceeding Under Sections 104, 106(a),
107 and 122 of the Comprehensive
Environmental Response, Compensation,
and Liability Act, as amended, 42 U.S.C.
§§ 9604, 9606(a), 9607 and 9622.

U.S. E.P.A. Region 2.

CERCLA Docket No. 02-2009-2008

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY OPERABLE UNIT NO 2
AND REMOVAL ACTION



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ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT
FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY OPERABLE UNIT NO. 2
AND REMOVAL ACTION

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and Honeywell International, Inc. ("Respondent" or "Honeywell"). The Settlement Agreement concerns the preparation and performance of a Remedial Investigation and Feasibility Study ("RI/FS") for Operable Unit No. 2 ("OU-2") which addresses the contamination that is located on or migrating from the Universal Oil Products Superfund Site located in East Rutherford, Bergen County, New Jersey ("Site"); performance of a removal action ("Removal Action"); and the reimbursement for Future Response Costs incurred by EPA in connection with the RI/FS and the Removal Action.

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622 ("CERCLA"). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (Jan. 29, 1987), and further delegated to Regional Administrators on May 11, 1994, by EPA Delegation Nos. 14-14-C and 14-14-D. This authority was redelegated by the Regional Administrator of EPA Region II to the Director of the Emergency and Remedial Response Division by EPA Delegations 14-14-C and 14-14-D dated November 23, 2004.

3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the United States Department of the Interior, the National Oceanic and Atmospheric Administration on , and the State of New Jersey, Office of Natural Resource Protection on July 31, 2009, of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal trusteeship.

4. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of fact, conclusions of law and determinations in Sections V and VI of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon EPA and upon Respondent and its successors and assigns. Any change in ownership or corporate status of a Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement Agreement.

6. Respondent shall ensure that its contractors, subcontractors, and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance with this Settlement Agreement.

7. The undersigned representative of Respondent certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind Respondent to this Settlement Agreement.

III. STATEMENT OF PURPOSE

8. In entering into this Settlement Agreement, the objectives of EPA and Respondent are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site, by conducting a Remedial Investigation as more specifically set forth in the Statement of Work ("SOW") attached as Appendix A to this Settlement Agreement; (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Feasibility Study as more specifically set forth in the SOW in Appendix A to this Settlement Agreement; (c) to conduct a Removal Action as more specifically set forth in the SOW; (d) to recover response and oversight costs incurred by EPA with respect to this Settlement Agreement; and (e) to resolve the potential liability of the Respondent to the extent provided by this Settlement Agreement for the Work Respondent completes pursuant to this Settlement Agreement.

9. The Work conducted under this Settlement Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP"). Respondent shall conduct all Work under this Settlement Agreement in compliance with CERCLA, the NCP, and all applicable EPA guidance, policies, and procedures. The activities conducted pursuant to this Settlement Agreement, if approved by EPA, shall be deemed to be consistent with the NCP.

IV. DEFINITIONS

10. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below

are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

- a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*
- b. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.
- c. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXX.
- d. "Engineering Controls" shall mean constructed containment barriers or systems that control one or more of the following: direct human contact with hazardous substances; downward migration, infiltration or seepage of surface runoff or rain; or natural leaching migration of contaminants through the subsurface over time. Examples include caps, engineered bottom barriers, immobilization processes, and vertical barriers.
- e. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- f. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs after the Effective Date in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, Agency for Toxic Substances and Disease Registry ("ATSDR") costs, the costs incurred pursuant to Paragraph 71 (costs and attorneys fees and any monies paid to secure access, including the amount of just compensation), Paragraph 57 (emergency response) and Paragraph 101 (Work Takeover).
- g. "Hazardous substances" shall mean any substance (or mixture containing any hazardous substance) that falls within the definition of a "hazardous substance," as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
- h. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.
- i. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be

the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

j. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

k. "NJDEP" shall mean the New Jersey Department of Environmental Protection and any successor departments or agencies of the State.

l. "Operable Unit 2" or "OU-2" shall mean the contamination that is located on or migrating from the areas of the Site known as Areas 1, 2, 3, and 4 and more specifically set forth in the Statement of Work and as shown on the map attached as Appendix B.

m. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral.

n. "Parties" shall mean EPA and the Respondent.

o. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.*

p. "Respondent" shall mean Honeywell International, Inc.

q. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

r. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent, the SOW, all appendices attached hereto (listed in Section XXVIII) and all documents incorporated by reference into this document including without limitation EPA-approved submissions. EPA-approved submissions (other than progress reports) are incorporated into and become a part of the Settlement Agreement upon approval by EPA. In the event of conflict between this Settlement Agreement and any appendix or other incorporated documents, this Settlement Agreement shall control.

s. "Site" shall mean shall mean the Universal Oil Products Superfund Site consisting of approximately 75 acres, in the Borough of East Rutherford, Bergen County, New Jersey and identified on the tax map of East Rutherford as Block 104, Lot 2; Block 105.01, Lot 8; and Block 105.02, Lot 5.

t. "State" shall mean the State of New Jersey.

u. "Statement of Work" or "SOW" shall mean the Statement of Work for development of a RI/FS for the Site, as set forth in Appendix A to this Settlement

Agreement. The Statement of Work is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement as are any modifications made thereto in accordance with this Settlement Agreement.

v. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any mixture containing any of the constituents noted in (1), (2) or (3), above.

w. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement and Statement of Work, except those required by Section XV (Retention of Records).

V. EPA'S FINDINGS OF FACT

11. The Site comprises approximately 75 acres and consists of an uplands area, former waste water holding lagoons, on-site stream channels, and wetlands. Berry's Creek borders a portion of the Site to the east. Universal Oil Products Company acquired title to the Site in 1963 and operated a solvent recovery facility and a waste water treatment facility there. Universal Oil Products Company changed its name to UOP Inc. ("UOP") in 1975. In 1979, UOP became a subsidiary of The Signal Companies, a predecessor of Honeywell, and subsequently ceased operations at the Site.

12. During the late 1970s NJDEP observed leaking drums and pipes and evidence of numerous chemical spills onto the ground at the Site. In 1982 and 1983, NJDEP issued Administrative Orders requiring UOP to sample the groundwater at the Site. Analyses of the samples showed that the shallow groundwater was contaminated by hazardous substances.

13. In 1983, the Site was placed on the National Priorities List. In 1986, UOP entered into an Administrative Consent Order with NJDEP ("1986 ACO") to conduct an RI/FS and implement a remedial action at the Site. UOP and its successors performed RI/FS activities at the Site from approximately 1986 to 1993. Sampling during the RI detected hazardous substances in the soil and groundwater. Hazardous substances found in the soil include 1,1,2,2-tetrachloroethane, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and lead. Hazardous substances found in the groundwater include benzene, chlorobenzene, 1,2-dichloroethene, trichloroethene, and 1,1,2,2-tetrachloroethane. In 1990, the waste lagoons at the Site were removed.

14. In September 1993, NJDEP issued a Record of Decision ("ROD"), with EPA's concurrence, selecting an interim remedy to the address the contaminated soil and groundwater in the upland areas of the Site. The selected remedy included excavation and on-site treatment by thermal desorption of the contaminated soil; a soil cap for areas of less contaminated soil; collection and on-site treatment of contaminated leachate, with discharge of the treated leachate into the groundwater; and institutional controls.

15. The ROD was modified, with EPA's concurrence, by a ROD amendment in December 1998 and an Explanation of Significant Differences ("ESD") in April 1999. The ROD amendment and ESD modified the methods of treating and disposing of a portion of the contaminated soil.

16. In 2000, the 1986 ACO was modified to include Honeywell as the party responsible for the remedial activities at the Site. In 2002, Honeywell acquired title to the Site, and is the current owner of a portion of the Site.

17. The remedial action occurred from 1996 to 2001 and included excavation of large quantities of contaminated soil, on-site treatment of contaminated soil, placement of a portion of the excavated soil on-site, off-site disposal of the remainder of the soil, and construction of a cap over areas where treated soil had been placed. The remedial action also included installation of groundwater collection trenches and treatment of a large volume of contaminated groundwater.

18. Honeywell is currently conducting an RI/FS pursuant to the terms of the 1986 ACO, as modified in 2000, to evaluate the options for remediation of on-site stream channels and wetland areas of the Site and to evaluate the effectiveness of the groundwater remedy implemented under the ROD.

19. In December 2006, Honeywell transferred title to a portion of the Site consisting of Block 105.01, Lot 8 and Block 105.02, Lot 5 to the New Jersey Sports & Exposition Authority ("NJSEA"). Under the terms of an agreement with NJSEA, Honeywell is obligated to fund and carry-out remedial activities at the Site.

20. In 2008, EPA became the lead regulatory agency for planning and implementing the response actions at the Site. NJDEP serves as the support agency for the Site. The Parties have agreed to enter into this Settlement Agreement to assure uninterrupted performance of the RI/FS, and to conduct a removal action for the berms of the former wastewater lagoon and in the area of the former wastewater lagoon at the Site.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, EPA has determined that:

21. The Universal Oil Products Superfund Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

22. The contamination found at the Site, as identified in the Findings of Fact above, includes "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

23. The conditions described in the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

24. The Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

25. The Respondent is a responsible party under Sections 104, 107 and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607 and 9622.

a. The Respondent is the "owner" and/or "operator" of the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

b. The Respondent is the successor to a person who was the "owner" and/or "operator" of the facility at the time of disposal of hazardous substances at the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2).

c. The Respondent is the successor to a person who arranged for disposal or treatment of hazardous substances at the facility within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

26. The actions required by this Settlement Agreement are necessary to protect the public health, welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

27. The actual or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

28. EPA has determined that Respondent is qualified to conduct the RI/FS and the Removal Action within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondent complies with the terms of this Settlement Agreement.

VII. NOTICE

29. By providing a copy of this Settlement Agreement to the State of New Jersey ("State"), EPA is notifying the State that this Settlement Agreement is being issued and that EPA is the lead agency for coordinating, overseeing, and enforcing the response action required by the Settlement Agreement.

VIII. SETTLEMENT AGREEMENT AND ORDER

30. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all appendices to this Settlement

Agreement and all documents incorporated by reference into this Settlement Agreement.

IX. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS

31. Selection of Contractors, Personnel. All Work performed under this Settlement Agreement shall be under the direction and supervision of qualified personnel. Within 7 days of the Effective Date of this Settlement Agreement, Respondent shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out such Work. With respect to any proposed contractor, Respondent shall demonstrate that the proposed contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995, or most recent version), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001 or subsequently issued guidance) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondent shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Settlement Agreement is contingent on Respondent's demonstration to EPA's satisfaction that Respondent is qualified to perform properly and promptly the actions set forth in this Settlement Agreement. If EPA disapproves in writing of any person's technical qualifications, Respondent shall notify EPA of the identity and qualifications of the replacements within 30 days of the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct a complete RI/FS and Removal Action, and to seek reimbursement for costs and penalties from Respondent. During the course of the RI/FS and Removal Action, Respondent shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to disapprove changes and additions to personnel as it has hereunder regarding the initial notification.

32. Within 7 days after the Effective Date, Respondent shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site Work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number and qualifications within 14 days following EPA's disapproval. Respondent shall have the right to change their Project Coordinator, subject to EPA's right to disapprove. Respondent shall notify EPA 30 days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notification. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by Respondent.

33. EPA has designated Douglas Tomchuk of the New Jersey Remediation Branch, Region II as its Project Coordinator. EPA will notify Respondent of a change of its designated Project Coordinator. Except as otherwise provided in this Settlement Agreement, Respondent shall direct all submissions required by this Settlement Agreement by certified mail, return receipt requested, or by UPS or Federal Express, to the Project Coordinator at:

Douglas Tomchuk
Remedial Project Manager
Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region 2
290 Broadway, 19th Floor
New York, New York 10007-1866

34. EPA's Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager ("RPM") and On-Scene Coordinator ("OSC") by the NCP. In addition, EPA's Project Coordinator shall have the authority consistent with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action when s/he determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the EPA Project Coordinator from the area under study pursuant to this Settlement Agreement shall not be cause for the stoppage or delay of Work.

35. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS and Removal Action, as required by Section 104(a) of CERCLA, 42 U.S.C. Section 9604(a). Such person shall have the authority to observe Work and make inquiries in the absence of EPA, but not to modify the RI/FS work plan, the Removal Action Design Plan, or any EPA approved submissions.

X. WORK TO BE PERFORMED

36. Respondent shall conduct the RI/FS in accordance with the provisions of this Settlement Agreement, the SOW, CERCLA, the NCP and EPA guidance, including, but not limited to the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Useability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990 or subsequently issued guidance), and guidance referenced therein, EPA Region 2's "Clean and Green Policy" which may be found at: http://www.epa.gov/region02/superfund/green_remediation/index.html, and guidance referenced in the SOW, as may be amended or modified by EPA. The RI/FS shall be conducted in a manner that minimizes environmental impacts in accordance with EPA Region 2 Clean and Green Policy to the extent consistent with the NCP. The RI shall consist of collecting data to characterize site conditions, determining the nature and extent of the contamination at or from the Site, assessing risk to human health and the environment and conducting treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies that are being

considered. The FS shall determine and evaluate (based on treatability testing, where appropriate) alternatives for remedial action to prevent, mitigate or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site. The alternatives evaluated must include, but shall not be limited to the range of alternatives described in the NCP, and shall include remedial actions that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In evaluating the alternatives, Respondent shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U.S.C. § 9621, and Section 300.430(e) of the NCP, 40 C.F.R. § 300.430(e). Upon request by EPA, Respondent shall submit in electronic form all portions of any plan, report or other deliverable Respondent is required to submit pursuant to provisions of this Settlement Agreement.

37. RI/FS Work Plan. Within 45 days of the effective date of this Settlement Agreement, Respondent shall submit to EPA a complete RI/FS Work Plan in accordance with Task I of the SOW. Upon its approval by EPA pursuant to Section XI (EPA Approval of Plans and Other Submissions), the RI/FS Work Plan shall be incorporated into and become enforceable under this Settlement Agreement. In accordance with Task I of the SOW, the RI/FS Work Plan shall include but shall not be limited to:

- a. Quality Assurance/Quality Control Project Plan ("QAPP"), which shall contain the following elements:
 - i. a detailed description of the sampling, analysis, and monitoring that shall be performed during the RI/FS;
 - ii. a plan for delineation of the contamination in the surface water;
 - iii. a plan for delineation of the contamination in the sediments; and
 - iv. a plan for the determination of the contaminant levels in the biota found at the Site.
- b. Health and Safety Plan ("HSP")
- c. Data Management Plan ("DMP")
- d. Green Strategy plan for implementing the Work. The strategy should follow EPA Region 2's *Clean and Green Policy* which may be found at http://www.epa.gov/region02/superfund/green_remediation/policy.html

38. Community Relations Plan. EPA will prepare a community relations plan, in accordance with EPA guidance and the NCP. As requested by EPA, Respondent shall provide information supporting EPA's community relations plan and shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or concerning the Site.

39. Site Characterization. Following EPA approval or modification of the RI/FS Work Plan, Respondent shall implement the provisions of the RI/FS Work Plan to characterize the Site. Respondent shall complete characterization of the Site and submit a Site Characterization Summary in accordance with the schedules and deadlines established in the EPA-approved RI/FS Work Plan and Task IV of the SOW.

40. Fate and Transport. Respondent shall submit a memorandum on fate and transport modeling in accordance with the schedules and deadlines established in the EPA-approved RI/FS Work Plan and with Task IV of the SOW.

41. Reuse Assessment. If EPA, in its sole discretion, determines that a Reuse Assessment is necessary, Respondent shall perform the Reuse Assessment in accordance with the SOW, RI/FS Work Plan and applicable guidance. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site. Respondent shall prepare the Reuse Assessment in accordance with EPA guidance, including, but not limited to: "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive" (OSWER Directive 9355.7-06P, June 4, 2001 or subsequently issued guidance).

42. Identification of Candidate Technologies Memorandum. This memorandum shall be submitted within 45 days of the Respondent's submission to EPA of the Site Characterization Summary.

43. Treatability Studies. Respondent shall conduct treatability studies, as requested by EPA. The major components of the treatability studies are described in the SOW. In accordance with the schedules or deadlines established in this Settlement Agreement, the SOW and/or the EPA-approved RI/FS Work Plan, Respondent shall provide EPA with the following deliverables for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions):

a. Treatability Testing Work Plan. Within 30 days after EPA determines that treatability testing is necessary, Respondent shall submit a Treatability Testing Work Plan, including a schedule.

b. Treatability Study QAPP. If the original QAPP is not adequate for defining the activities to be performed during the treatability testing, Respondent shall prepare a separate treatability study QAPP, or amendment to the original QAPP for the Site, for EPA review and approval, and it shall be submitted at the same time as the Treatability Study Work Plan.

c. Treatability Study Site Health and Safety Plan. If the original HSP is not adequate for defining the activities to be performed during the treatability testing, Respondent shall prepare a separate or amended HSP for EPA review and comment, and it shall be submitted at the same time as the Treatability Study Work Plan.

d. Treatability Study Evaluation Report. Within 45 days after completion of any treatability testing, Respondent shall submit a treatability study evaluation report as

provided in the SOW and Work Plan.

44. Baseline Human Health Risk Assessment and Ecological Risk Assessment.

Respondent shall perform the Baseline Human Health Risk Assessment and Ecological Risk Assessment for the Site ("Risk Assessments") in accordance with the SOW, RI/FS Work Plan and applicable EPA guidance, including but not limited to: "Interim Final Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part A)," (RAGS, EPA-540-1-89-002, OSWER Directive 9285.7-01A, December 1989); "Interim Final Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)," (RAGS, EPA 540-R-97-033, OSWER Directive 9285.7-01D, January 1998); "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" (ERAGS, EPA-540-R-97-006, OSWER Directive 9285.7-25, June 1997) or subsequently issued guidance.

45. Draft Remedial Investigation Report. In accordance with the approved schedule in the RI/FS Work Plan Respondent shall submit to EPA for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions), a Draft RI Report consistent with the SOW and the RI/FS Work Plan. The Draft RI Report shall also contain the Risk Assessments.

46. Final Remedial Investigation Report. Within 30 days of receiving EPA's comments on the Draft RI Report, the Respondent shall amend and submit to EPA a final report which is responsive to the directions in all EPA comments.

47. Development and Screening of Alternatives. Respondent shall develop an appropriate range of waste management options that will be evaluated through the development and screening of alternatives, as provided in the SOW and RI/FS Work Plan. Within 45 days of approval of the Risk Assessments, or within 45 days of EPA's approval of the Treatability Study Evaluation Report (if treatability studies are required), whichever is later, Respondent shall make a presentation to EPA and the State identifying the remedial action objectives and summarizing the development and preliminary screening of alternatives, and shall prepare and submit to EPA for approval pursuant to Section XI (EPA Approval of Plans and Submissions) a Development and Screening of Remedial Alternatives Technical Memorandum in accordance with this Settlement Agreement, the SOW, and applicable EPA guidance. The Development and Screening of Remedial Alternatives Technical Memorandum shall summarize the development and screening of remedial alternatives.

48. Detailed Analysis of Alternatives. Respondent shall conduct a detailed analysis of remedial alternatives, as described in the SOW and RI/FS Work Plan. In accordance with the deadlines or schedules established in this Settlement Agreement, the SOW and/or the EPA-approved RI/FS Work Plan Respondent shall provide EPA with a Remedial Alternatives Evaluation Technical Memorandum for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions).

49. Draft Feasibility Study Report. Within 45 days after the presentation to EPA described in Paragraph 47, Respondent shall submit to EPA a Draft FS Report which reflects the

findings in the Risk Assessments. Respondent shall refer to the RI/FS Work Plan, the SOW, and the RI/FS Guidance for report content and format.

50. Upon receipt of the Draft FS Report, EPA will evaluate, as necessary, the estimates of the risk to the public and environment that are expected to remain after a particular remedial alternative has been completed and will evaluate the durability, reliability and effectiveness of any proposed Institutional Controls. Within 30 days of receiving EPA's comments on the Draft FS Report, Respondent shall prepare a revised FS Report that is responsive to the directions in all EPA comments. The report as amended, and the administrative record, shall provide the basis for the proposed plan under CERCLA Sections 113(k) and 117(a) by EPA, and shall document the development and analysis of remedial alternatives.

51. Removal Action. Respondent shall conduct the Removal Action in accordance with this Settlement Agreement, the SOW, CERCLA, the NCP, EPA guidance, including EPA Region 2's "*Clean and Green Policy*" which may be found at: http://www.epa.gov/region02/superfund/green_remediation/index.html, and guidances referenced in the SOW, as may be amended or modified by EPA. Upon request by EPA, Respondent shall submit in electronic form all portions of any plan, report or other deliverable Respondent is required to submit pursuant to provisions of this Settlement Agreement.

a. Engineering Evaluation/Cost Analysis ("EE/CA"). In accordance with Task II. A. of the SOW, within 6 months of the Effective Date of this Settlement Agreement, Respondent shall submit a draft EE/CA for EPA review and approval. The draft EE/CA will evaluate the levels of contamination in the berms of the former wastewater lagoon at the Site and in the area of the former wastewater lagoon identified as Area 3 on the map attached as Appendix B, and the EE/CA will consider alternatives to address that contaminated material prior to completion of the RI/FS. EPA will provide comments on the draft EE/CA, pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement. Within 30 days of receiving comments from EPA on the draft EE/CA, Respondent shall prepare a revised EE/CA that is responsive to the directions in all EPA comments. Respondent shall submit the revised EE/CA to EPA for approval pursuant to Section XI of the Settlement Agreement, unless Respondent is directed otherwise by EPA in writing.

After the EE/CA is approved by EPA, EPA will provide the public an opportunity to comment on the proposed Removal Action. After EPA considers public comments, EPA will prepare an Action Memorandum documenting the removal alternative recommended by the EE/CA.

b. Removal Action Design Plan. In accordance with Task II. B. of the SOW, within 45 days of the date of signature of the Action Memorandum, Respondent shall submit a draft Removal Action Design Plan for the removal alternative recommended by the EE/CA for EPA review and approval, pursuant to Section XI of the Settlement Agreement (EPA Approval of Plans and Other Submissions).

c. Final Report. In accordance with Task III.C. of the SOW, within 30 days after completion of the Removal Action activities described in the SOW, Respondent shall submit for EPA review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) a Final Report summarizing the removal work completed at the Site and any plans for continued Operation and Maintenance of the completed actions. The Final Report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports" and EPA guidance entitled "Superfund Removal Procedures: Removal Response Reporting – POLREPS and OSC Reports" (OSWER Directive No. 9360.3-03, June 1, 1994), or subsequently issued guidance. The Final Report shall include a good faith estimate of total costs and/or a statement of actual costs incurred in performing the Removal Action, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the Removal Action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

"Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

52. Modification of RI/FS Work Plan and Removal Action Design Plan.

- a. If at any time during implementation of the Work under this Settlement Agreement, Respondent identifies a need for additional data, Respondent shall submit a memorandum documenting the need for additional data to the EPA Project Coordinator within 30 days of identification. EPA in its discretion will determine whether the additional data will be collected by Respondent and whether it will be incorporated into reports and deliverables.
- b. In the event of unanticipated or changed circumstances at the Site, Respondent shall notify the EPA Project Coordinator by telephone within 24 hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the immediate threat or the unanticipated or changed circumstances warrant changes in the RI/FS Work Plan and/or the Removal Action Design Plan, EPA shall modify or amend the RI/FS Work Plan and/or the Removal Action Design Plan in writing accordingly. Respondents shall perform the RI/FS Work Plan and the Removal Action Design Plan as modified or amended.

c. EPA may determine that in addition to tasks defined in the initially approved RI/FS Work Plan and/or Removal Action Design Plan, other additional Work may be necessary to accomplish the objectives of the RI/FS and Removal Action. Respondent agrees to perform these response actions in addition to those required by the initially approved RI/FS Work Plan and Removal Action Design Plan, including any approved modifications, if EPA determines in writing that such actions are necessary for a complete RI/FS and Removal Action.

d. Respondent shall confirm its willingness to perform the additional Work in writing to EPA within 7 days of receipt of the EPA request. If Respondent objects to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondent may seek dispute resolution pursuant to Section XVI (Dispute Resolution). The SOW, the RI/FS Work Plan and/or the Removal Action Design Plan shall be modified in accordance with the final resolution of the dispute.

e. Respondent shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the RI/FS Work Plan, written RI/FS Work Plan supplement, Removal Action Design Plan, and/or written Removal Action Design Plan supplement. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondent, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

53. Off-Site Shipment of Waste Material. Respondent shall, prior any off-site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's Project Coordinator.

a. Respondent shall include in the written notification the following information: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by Respondent following the award of the contract for the RI/FS. Respondent shall provide the information required by Subparagraph 53.a and Paragraph 54 as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

54. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondent shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall only send

hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

55. Meetings. Respondent shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct, and completion of the RI/FS and Removal Action for the Site. In addition to discussion of the technical aspects of the RI/FS and Removal Action, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

56. Progress Reports. In addition to the deliverables set forth in the Settlement Agreement and SOW, Respondent shall provide to EPA monthly progress reports by the 15th day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Settlement Agreement during that month, (2) include all results of sampling and tests and all other data received by Respondent, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FS and Removal Action completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

57. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the Emergency Spill Reporting Hotline at (732) 548-8730 and the EPA Project Coordinator or, in the event of his/her unavailability, the Chief of the New Jersey Remediation Section of the Emergency and Remedial Response Division of EPA Region 2 at (212) 637-4380 of the incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XIX (Payment of Response Costs).

b. In addition, in the event of any release of a hazardous substance from the Site, Respondent shall immediately notify the EPA Project Coordinator, the Chief of the New Jersey Remediation Section of the Emergency and Remedial Response Division of EPA Region 2) by telephone (212-637-4380) and the National Response Center at (800) 424-8802. Respondent shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any

release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

58. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Settlement Agreement, in a notice to Respondent EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within 30 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

59. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Subparagraph 58(a), (b), (c) or (e), Respondent shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XVI (Dispute Resolution) with respect to the modifications or conditions made by EPA. Following EPA approval or modification of a submission or portion thereof, Respondent shall not thereafter alter or amend such submission or portion thereof unless directed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Subparagraph 58(c) and the submission had a material defect, EPA retains the right to seek stipulated penalties, as provided in Section XVII (Stipulated Penalties).

60. Resubmission.

- a. Upon receipt of a notice of disapproval, Respondent shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVII, shall accrue during the 30-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 61 and 62.
- b. Notwithstanding the receipt of a notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA in writing. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for stipulated penalties under Section XVII (Stipulated Penalties).
- c. Respondent shall not proceed further with any subsequent activities or tasks until

receiving EPA approval, approval on condition or modification of the following deliverables: RI/FS Work Plan, Removal Action Design Plan, Draft Remedial Investigation Report, Treatability Testing Work Plan, Sampling and Analysis Plan, and Draft Feasibility Study Report. While awaiting EPA approval, approval on condition or modification of these deliverables, Respondent shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Settlement Agreement.

- d. For all remaining deliverables not listed above in subparagraph 60 (c), Respondent shall proceed with all subsequent tasks, activities and deliverables without awaiting EPA approval of the submitted deliverable. EPA reserves the right to stop Respondent from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the RI/FS or Removal Action.

61. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondent to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report or other deliverable. Respondent shall implement any such plan, report, or deliverable as corrected, modified or developed by EPA, subject only to Respondent's right to invoke the procedures set forth in Section XVI (Dispute Resolution).

62. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondent invokes the dispute resolution procedures in accordance with Section XVI (Dispute Resolution) and EPA's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by EPA or superseded by an agreement reached pursuant to that Section. The provisions of Section XVI (Dispute Resolution) and Section XVII (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is not otherwise revoked, substantially modified or superseded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XVI, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVII.

63. In the event that EPA takes over some of the tasks, but not the preparation of the RI Report or the FS Report, Respondent shall incorporate and integrate information supplied by EPA into the final reports.

64. All plans, reports, and other deliverables submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Settlement Agreement. In the event EPA approves or modifies a portion of a plan, report, or other deliverable submitted to EPA under this Settlement Agreement, the approved or modified portion shall be incorporated into and enforceable under this Settlement Agreement.

65. Neither failure of EPA to expressly approve or disapprove of Respondent's

submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Whether or not EPA gives express approval for Respondent's deliverables, Respondent is responsible for preparing deliverables acceptable to EPA.

XII. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

66. Quality Assurance. Respondent shall use quality assurance, quality control, and chain of custody procedures for all samples in accordance with (i) the requirements of the Uniform Federal Policy for Implementing Quality Systems (UFP-QS), EPA-505-F-03-001, March 2005 and (ii) the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), Parts 1, 2A and 2B, EPA-505-B-04-900A, C and B, March 2005 or newer, and subsequent amendments to such guidelines upon notification by EPA to Respondent of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Settlement Agreement, Respondent shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a QAPP that is consistent with the SOW, the NCP and applicable guidance documents. If relevant to the proceeding, the Respondent agrees that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Settlement Agreement. The QAPP shall require that any laboratory utilized by Respondent is certified for the matrix/analyses, which are to be conducted for any work performed pursuant to this Settlement Agreement, by one of the following accreditation/certification programs: USEPA Contract Laboratory Program (CLP), National Environmental Laboratory Accreditation Program (NELAP), American Association for Laboratory Accreditation (A2LA), or a certification issued by a program conducted by a state, and acceptable to EPA, for the analytic service to be provided. If a specific analytical service is unavailable from a certified laboratory, EPA may, within its discretion, approve Respondent's utilization of a laboratory that is not certified. EPA approval shall be based on Respondent's submittal of a written request, submittal of the laboratory quality assurance plan, and the laboratory's demonstration of capability through the analysis of Performance Evaluation samples for the constituents of concern. Respondent shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Settlement Agreement will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

67. Sampling.

- a. The QAPP will provide for electronic submittal of sampling and geologic data in accordance with R2 policies, guidelines, and formats. The R2 Electronic Data Deliverable (EDD) is a standardized format for all electronic submittals to EPA Region 2. The most recent EDD Guidance and Requirements can be found at:
<http://www.epa.gov/region02/superfund/medd.htm>. All results of sampling, tests, modeling or other data (including raw data) generated by Respondent, or on Respondent's behalf, during the period that this Settlement Agreement is effective, shall be submitted to EPA in the next monthly progress report as described in Paragraph 56 of this Settlement Agreement. EPA will make available to Respondent validated data generated by EPA,

unless it is exempt from disclosure by any federal or state law or regulation.

- b. Respondent shall verbally notify EPA and the State at least 14 days prior to conducting significant field events as described in the SOW, RI/FS Work Plan, and Removal Action Design Plan. At EPA's verbal or written request, or the request of EPA's oversight assistant, Respondent shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) or the State of any samples collected in implementing this Settlement Agreement. All split samples of Respondent shall be analyzed by the methods identified in the QAPP.

68. Access to Information.

- a. Respondent shall provide to EPA and the State, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondent shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.
- b. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to EPA and the State under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when it is submitted to EPA, or if EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent. Respondent shall segregate and clearly identify all documents or information submitted under this Settlement Agreement for which Respondent asserts business confidentiality claims.
- c. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondent asserts such a privilege in lieu of providing documents, they shall provide EPA and the State with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

- d. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

69. In entering into this Settlement Agreement, Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance or oversight of the Work that has been verified according to the quality assurance/quality control ("QA/QC") procedures required by the Settlement Agreement or any EPA-approved RI/FS Work Plans or Sampling and Analysis Plans. If Respondent objects to any other data relating to the RI/FS or Removal Action, Respondent shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days of the monthly progress report containing the data.

XIII. SITE ACCESS AND INSTITUTIONAL CONTROLS

70. If the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by Respondent, Respondent shall, commencing on the Effective Date, provide EPA, the State and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

71. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within 60 days after the Effective Date, or as otherwise specified in writing by the EPA Project Coordinator. Respondent shall immediately notify EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. If Respondent cannot obtain access agreements, EPA may either (i) obtain access for Respondent or assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the Settlement Agreement. Respondent shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XIX (Payment of Response Costs). If EPA performs those tasks or activities with EPA contractors and does not terminate the Settlement Agreement, Respondent shall perform all other tasks or activities not requiring access to that property, and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondent shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports and other deliverables.

72. Notwithstanding any provision of this Settlement Agreement, EPA and the State retain all of their access authorities and rights as well as all of their rights to require land/water

use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIV. COMPLIANCE WITH OTHER LAWS

73. Respondent shall comply with all applicable local, state and federal laws and regulations when performing the RI/FS and Removal Action. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and requires a federal or state permit or approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XV. RETENTION OF RECORDS

74. During the pendency of this Settlement Agreement and for a minimum of 10 years after commencement of construction of any remedial action, Respondent shall preserve and retain all non-identical copies of documents, records, and other information (including documents, records, or other information in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 10 years after commencement of construction of any remedial action, Respondent shall also instruct their contractors and agents to preserve all documents, records, and other information of whatever kind, nature or description relating to performance of the Work.

75. At the conclusion of this document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such documents, records or other information, and, upon request by EPA, Respondent shall deliver any such documents, records, or other information to EPA. Respondent may assert that certain documents, records, and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, they shall provide EPA with the following: 1) the title of the document, record, or other information; 2) the date of the document, record, or other information; 3) the name and title of the author of the document, record, or other information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or other information; and 6) the privilege asserted by Respondent. However, no documents, records or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

76. Respondent hereby certifies that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential

liability regarding the Site since notification of potential liability by EPA or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XVI. DISPUTE RESOLUTION

77. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

78. If Respondent objects to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, they shall notify EPA in writing of their objection(s) within 21 days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondent shall have 30 days from EPA's receipt of Respondent's written objection(s) to resolve the dispute (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted verbally but must be confirmed in writing.

79. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, the Chief of the New Jersey Remediation Branch of the Emergency and Remedial Response Division of EPA Region 2 will issue a written decision. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs, and regardless of whether Respondent agrees with the decision.

XVII. STIPULATED PENALTIES

80. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 81 and 82 for failure to comply with any of the requirements of this Settlement Agreement specified below unless excused under Section XVIII (Force Majeure). "Compliance" by Respondent shall include completion of the Work under this Settlement Agreement or any activities contemplated under any RI/FS Work Plan, Removal Action Design Plan or other plan approved under this Settlement Agreement identified below, in accordance with all applicable requirements of law, this Settlement Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

81. Stipulated Penalty Amounts- Work

a. For the following major deliverables and requirements required under this Settlement Agreement and the SOW: Draft EE/CA, Final EE/CA, Removal Action Design Plan, RI/FS Work Plan and Schedule, QAPP, HSP, DMP, Site Characterization Summary, Identification of Candidate Technologies Memorandum, Treatability Study Evaluation Report, Baseline Human Health Risk Assessment, Screening-Level Ecological Risk Assessment, Final Baseline Ecological Risk Assessment, Draft RI Report, Final RI Report, Development and Screening of Remedial Alternatives Technologies Memorandum, Draft FS Report, Final FS Report, Final Report, Payments pursuant to Section XIX, and Establishing an Escrow Account pursuant to Section XIX, stipulated penalties shall accrue per violation per day for failure to submit timely and adequate deliverables or to perform the requirement in the following amounts:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 2,000	1 st through 14 th day
\$ 3,000	15 th through 30 th day
\$ 5,000	31 st day and beyond

b. For the following interim deliverables required under this Settlement Agreement and the SOW: Reuse Assessment, Treatability Testing Work Plan and Schedule, Treatability Study QAPP, Treatability Study Health and Safety Plan, Memorandum on Fate and Transport Modeling, stipulated penalties shall accrue per violation per day for failure to submit timely and adequate deliverables, in the following amounts:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 1,000	1 st through 14 th day
\$ 2,000	15 th through 30 th day
\$ 3,000	31 st day and beyond

82. Stipulated Penalty Amounts – Reports

For failure to submit monthly progress reports, certificates of insurance, the name of the Project Coordinator (pursuant to Section VIII of this Settlement Agreement), or any other violations of this Settlement Agreement not specified in Paragraphs 81.a. and 81.b., above, stipulated penalties shall accrue per violation per day in the following amounts:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
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\$ 500	1 st through 14 th day
\$ 1,000	15 th through 30 th day
\$ 3,000	31 st day and beyond

83. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 101 of Section XXI (Reservation of Rights by EPA), Respondent shall be liable for a stipulated penalty in the amount of \$350,000. This Paragraph shall not apply to any Work activities which EPA decides to perform pursuant to Paragraph 71 on areas of the Site not owned by the Respondent.

84. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (2) with respect to a decision by the EPA Management Official designated in Paragraph 79 of Section XVI (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA Management Official issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

85. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, EPA may give Respondent written notification of the same and describe the noncompliance. EPA may send Respondent a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondent of a violation.

86. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures in accordance with Section XVI (Dispute Resolution). All payments to EPA under this Section shall indicate that the payment is for stipulated penalties and shall be remitted via Electronic Funds Transfer ("EFT") to EPA's Account with the Federal Reserve Bank of New York, along with the following information:

- i. Amount of Payment
- ii. Title of Federal Reserve Bank account to receive the payment: EPA
- iii. Address of Federal Reserve Bank account to receive the payment:
33 Liberty Street
New York, NY 10045
SWIFT Address: FRNNYUUS33
- iv. Account code for Federal Reserve Bank account receiving the payment:
68010727

- v. Federal Reserve Bank ABA Routing Number: 021030004;
- vi. Name of Party making payment;
- vii. A message in Field Tag 4200 of the EFT that reads "D 68010727 Environmental Protection Agency"
- viii. Site/Spill Identifier Number: 02-C8
- ix. The case docket number: 02-2009-2008

87. To ensure that a payment is properly recorded, a letter should be sent, within seven working days of the EFT, which references the date of the EFT, the payment amount, that the payment is for stipulated penalties, the name of the Site, the case docket number, and the name and address of the party making payment to the United States shall be sent to the names and addresses specified in Section XIX.

88. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.

89. Penalties shall continue to accrue as provided in Paragraph 84 during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.

90. If Respondent fails to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 86.

91. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XXI (Reservation of Rights by EPA), Paragraph 101. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVIII. FORCE MAJEURE

92. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, *force majeure* is defined as any event arising from causes beyond the control of Respondent or of any entity controlled by

Respondent, including but not limited to its contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

93. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify EPA orally within 5 days of when Respondent first knew that the event might cause a delay. Within 7 days thereafter, Respondent shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a *force majeure* event if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Respondent from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

94. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Respondent in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XIX. PAYMENT OF RESPONSE COSTS

95. Payments of Future Response Costs.

- a. Respondent shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondent a bill requiring payment that includes a printout of cost data in EPA's financial management system, known as a SCORPIOS report, and a calculation of EPA's indirect costs. Respondent shall make all payments within 30 days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 97 of this Settlement Agreement, by remitting the amount of those costs via EFT along with the following information, to EPA's Account with the Federal Reserve Bank of New York as follows:

- i. Amount of Payment
- ii. Title of Federal Reserve Bank account to receive the payment:
EPA.
- iii. Address of Federal Reserve Bank account to receive the payment:
33 Liberty Street
New York, NY 10045
SWIFT Address: FRNNYUUS33
- iv. Account code for Federal Reserve Bank account receiving the
payment: 68010727
- v. Federal Reserve Bank ABA Routing Number: 021030004;
- vi. Name of Party making payment;
- vii. A message in Field Tag 4200 of the EFT that reads "D 68010727
Environmental Protection Agency"
- vii. Site/Spill Identifier Number: 02-C8
- viii. The case docket number: 02-2009-2008

- b. To ensure that a payment is properly recorded, a letter should be sent, within seven working days of the EFT, which references the date of the EFT, the payment amount, that the payment is for Future Response Costs, the name of the Site, the case docket number, and the name and address of the party making payment to the United States, to the following:

New Jersey Remediation Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region 2
290 Broadway, 19th Floor
New York, New York 10007-1866
Attention: Universal Oil Products Site Remedial Project Manager

New Jersey Superfund Branch
Office of Regional Counsel
U.S. Environmental Protection Agency, Region 2
290 Broadway, 17th Floor
New York, New York 10007-1866
Attention: Universal Oil Products Site Attorney

U.S. Environmental Protection Agency
Attn: Richard Rice
26 W. Martin Luther King Drive
Cincinnati Finance Center, MS: NWD
Cincinnati, Ohio 45268
email: AcctsReceivable.CINWD@epa.gov and
rice.richard@epa.gov

- c. The total amount to be paid by Respondent pursuant to Subparagraph 95.a. shall be deposited in the Universal Oil Products Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

96. If Respondent does not pay Future Response Costs within 30 days of Respondent's receipt of a bill, Respondent shall pay Interest on the unpaid balance of Future Response Costs. The Interest on unpaid Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVII. Respondent shall make all payments required by this Paragraph in the manner described in Paragraph 95.

97. Respondent may contest payment of any Future Response Costs under Paragraph 95 if it determines that EPA has made an accounting error or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the EPA Project Coordinator. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondent shall within the 30 day period pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 95. Simultaneously, Respondent shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of New Jersey and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondent shall send to the EPA Project Coordinator a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondent shall initiate the Dispute Resolution procedures in Section XVI (Dispute Resolution). If EPA prevails in the dispute, within 7 days of the resolution of the dispute, Respondent shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 95. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to EPA in the manner described in Paragraph 95. Any balance of the escrow account shall then be disbursed to Respondent. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVI (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its Future Response Costs.

XX. COVENANT NOT TO SUE BY EPA

98. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondent of all obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XIX. This covenant not to sue extends only to Respondent and does not extend to any other person.

XXI. RESERVATIONS OF RIGHTS BY EPA

99. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

100. The covenant not to sue set forth in Section XX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;
- b. liability for costs not included within the definition of Future Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

101. Work Takeover. In the event EPA determines that Respondent has ceased

implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondent may invoke the procedures set forth in Section XVI (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondent shall pay pursuant to Section XIX (Payment of Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXII. COVENANT NOT TO SUE BY RESPONDENT

102. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:

- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;
- b. any claim arising out of the Work or arising out of the response actions for which Future Response Costs have or will be incurred, including any claim under the United States Constitution, the New Jersey Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; and
- c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of Future Response Costs, and this Settlement Agreement.

103. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 100 (b), (c), and (e) - (g), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

104. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXIII. OTHER CLAIMS

105. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of

Respondent.

106. Except as expressly provided in Section XXI (Covenant Not To Sue By EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

107. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIV. CONTRIBUTION PROTECTION

108. Contribution Protection.

a. The Parties agree that this Settlement Agreement constitutes an administrative ~~settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that~~ Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs.

b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondent has, as of the Effective Date, resolved its liability to the United States for the Work and Future Response Costs.

c. Nothing in this Settlement Agreement precludes the United States or Respondent from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any person not a party to this Settlement Agreement. Nothing herein diminishes the right of the United States, pursuant to Sections 113(f)(2) and (3) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and (3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

XXV. INDEMNIFICATION

109. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying

out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States.

110. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

111. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site.

XXVI. INSURANCE

112. At least 30 days prior to commencing any on-site Work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of 5 million dollars, combined single limit, naming the EPA as an additional insured. Within the same period, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondent shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Settlement Agreement. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVII. FINANCIAL ASSURANCE

113. Within 30 days of the Effective Date, Respondent shall establish and maintain financial security for the benefit of EPA in the amount of \$2,000,000 in one or more of the

following forms, in order to secure the full and final completion of Work by Respondent:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of the Work stated above;
- c. a trust fund administered by a trustee acceptable in all respects to EPA;
- d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;
- e. a corporate guarantee to perform the Work provided by one or more parent corporations or subsidiaries of Respondent, or by one or more unrelated corporations that have a substantial business relationship with Respondent; including a demonstration that any such company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or
- f. a corporate guarantee to perform the Work by Respondent, including a demonstration that Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).

114. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondent shall, within 30 days of receipt of written notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 113, above. In addition, if at any time EPA notifies Respondent in writing that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Respondent shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondent's inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

115. If Respondent seeks to ensure completion of the Work through a guarantee pursuant to Subparagraph 113.e. or 113.f. of this Settlement Agreement, Respondent shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the current cost estimate of \$2,000,000 for the Work at the Site shall be used in relevant financial test calculations.

116. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 113 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondent may seek dispute resolution pursuant to Section XVI (Dispute Resolution). Respondent may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

117. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVIII. INTEGRATION/APPENDICES

118. This Settlement Agreement and its appendices, and any deliverables, technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), etc. that will be developed pursuant to this Settlement Agreement and become incorporated into and enforceable under this Settlement Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

"Appendix A" is the SOW.

"Appendix B" is the map of the Site.

XXIX. ADMINISTRATIVE RECORD

119. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondent shall submit to EPA documents developed during the course of the RI/FS and Removal Action upon which selection of the response action may be based. Upon request of EPA, Respondent shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Upon request of EPA, Respondent shall additionally submit any previous studies conducted under state, local or other federal authorities relating to selection of the response action, and all communications between Respondent and state, local or other federal authorities concerning selection of the response action. At EPA's discretion, Respondent shall establish a

community information repository at or near the Site, to house one copy of the administrative record.

XXX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

120. The Effective Date of this Settlement Agreement shall be the date that it is signed by the EPA Region 2 Director, Emergency and Remedial Response Division, or his delegatee.

121. This Settlement Agreement may be amended by mutual agreement of EPA and Respondent. Amendments shall be in writing and shall be effective when signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Settlement Agreement.

122. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified. Any deliverables, plans, technical memoranda, reports (other than progress reports), specifications, schedules and other documents required to be submitted to EPA pursuant to this Settlement Agreement shall, upon approval by EPA, be deemed to be incorporated in and an enforceable part of this Settlement Agreement.

XXXI. NOTICE OF COMPLETION OF WORK

123. When EPA determines that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including but not limited to, retention of records and payment of Future Response Costs, EPA will provide written notice to Respondent. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the RI/FS Work Plan and/or Removal Action Design Plan if appropriate in order to correct such deficiencies, in accordance with Paragraph 52 (Modification of RI/FS Work Plan and Removal Action Design Plan). Failure by Respondent to implement the approved modified RI/FS Work Plan and/or Removal Action Design Plan shall be a violation of this Settlement Agreement.

In the Matter of Universal Oil Products Superfund Site
CERCLA Docket No. 02-2009-20008

For The United States Environmental Protection Agency:

It is so ORDERED AND AGREED this 27th day of September, 2010.

BY: 

DATE: 9/27/2010

Walter Mugdan, Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region 2

In the Matter of Universal Oil Products Superfund Site
CERCLA Docket No. 02-2009-20008

CONSENT

The undersigned representative of Respondent certifies that it is fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the party it represents to this document.

For Respondent Honeywell International, Inc.

By: John J. Morris

Print: John J. Morris

Title: Remediation Director

Agreed this 20th day of Sept., 2010

For Respondent

By

Print

Title _____

APPENDIX A

STATEMENT OF WORK FOR REMEDIAL INVESTIGATION, FEASIBILITY STUDY, AND REMOVAL ACTION UNIVERSAL OIL PRODUCTS SITE OPERABLE UNIT 2 EAST RUTHERFORD, BERGEN COUNTY, NEW JERSEY

I. INTRODUCTION

A. The purpose of this remedial investigation/feasibility study ("RI/FS") is to investigate the nature and extent of contamination at Operable Unit 2 ("OU2"), also known as Areas 3 and 4, of the Universal Oil Products ("UOP") Site (the "Site"), and develop and evaluate potential remedial alternatives. Note, in the 2006 Five-year Review for the UOP Site, EPA grouped Area 3, the lagoon, and Area 4, surface water channels and marshlands, into OU2. The selected alternative for OU2 will address both Areas 3 and 4. In addition, the RI/FS will determine if ground water contamination in the upland areas of the UOP Site (Areas 1 and 2) are impacting surface water in Area 4. The RI and FS are interactive and may be conducted concurrently so that the data collected in the RI influences the development of remedial alternatives in the FS, which in turn affects the data needs and the scope of treatability studies, if needed. The purpose of the Removal Action is to address immediate concerns at the Site.

All previous work conducted as part of OU2 of the Site shall be evaluated as part of the RI/FS process and shall be utilized to satisfy the requirements of this Statement of Work ("SOW"), wherever possible. It is recognized that the Respondent will need to obtain additional data, possibly in areas that have been previously investigated, and that previously submitted documents, including work plans, may need to be, at a minimum, revised, and re-submitted for review. The tasks described herein shall result in a comprehensive RI/FS for OU2 of the Site that can be used to support the selection of a remedy for OU2 areas.

B. The Respondent shall conduct this RI/FS and shall produce draft RI and FS reports that are in accordance with this statement of work, the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA, Office of Emergency and Remedial Response, October 1988), the

Contaminated Sediment Remediation Guidance for Hazardous Waste Sites (U.S. EPA, Office of Emergency and Remedial Response, December 2005, EPA Region 2's "Clean and Green Policy" which may be found at:

[http://www.epa.gov/region02/superfund/green remediation/index.html](http://www.epa.gov/region02/superfund/green%20remediation/index.html), and any other guidance that EPA uses in conducting a RI/FS, as well as any additional requirements in the Administrative Settlement Agreement and Order on Consent ("Settlement Agreement"). The RI/FS Guidance describes the report format and the required report content. The Respondent shall furnish all necessary personnel, materials, and services needed for, or incidental to, the performance of the RI/FS, except as otherwise specified in the Settlement Agreement

C. At the completion of the RI/FS, EPA will be responsible for the selection of the remedy for OU2 of the Site and will document the selection in a Record of Decision ("ROD"). The remedial action alternative selected by EPA will meet the cleanup standards specified in CERCLA Section 121. That is, the selected remedial action will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws, will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable, and will address the statutory preference for treatment as a principal element. The final RI/FS report, as adopted by EPA, and the baseline risk assessment will, with the administrative record, form the basis for the selection of the remedy for the Site and will provide the information necessary to support the development of the ROD. The remedy selected for the Site will consider the remedial approach approved for other portions of the UOP Site, the Removal Action conducted under this Settlement Agreement, as well as the interactions (including potential for recontamination) with the Berry's Creek Study Area (BCSA).

D. As specified in CERCLA Section 104(a)(1), EPA will provide oversight of the Respondent's activities throughout the RI/FS and Removal Action. The Respondent shall support EPA's initiation and conduct of activities related to the implementation of oversight activities.

II. TASK I - RI/FS WORK PLAN

A. The RI/FS is conducted to gather sufficient data and information necessary to characterize the nature and extent of contamination in order to support the selection of a remedy for the Site that will reduce or eliminate risks to human health or the environment associated with contamination at the Site. Respondents shall follow the Uniform Federal Policy for Implementing Quality Systems (UFP-QS), EPA-505-F-03-001, March 2005 or newer, Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), Parts 1, 2 and 3, EPA-505-B-04-900A, B and C, March 2005 or newer, and other guidance documents referenced in the aforementioned guidance documents. The UFP documents may be found at: <http://www.epa.gov/fedfac/documents/qualityassurance.htm> . In addition, the guidance and procedures located in the EPA Region 2 DESA/HWSB web site: <http://www.epa.gov/region02/qa/documents.htm>, as well as other OSWER directives and EPA Region 2 policies should be followed as appropriate. Subsequent amendments to the above, upon notification by EPA to Respondents of such amendments, shall apply only to procedures conducted after such notification.

B. The RI/FS achieves its objectives by determining the horizontal and vertical distribution and concentration of hazardous substances in the soil, sediment, biota, ground water, and other potentially affected media, and their fate and transport within and from the Site.

C. Existing data related to the Site has been compiled into a Preliminary Site Characterization Report, which was submitted by Respondent in October 2008. This report includes, but is not limited to, the results of previous investigations of the Site, historical information about the Site, a refined Conceptual Site Model (CSM), and other available information. To the extent that information is available from the ongoing RI/FS of the Berry's Creek Study Area, that information should be accounted for in the investigations described in the RI/FS Work Plan.

D. Based off of the analysis of the existing data, the scope of work for the remaining data collections and analyses is planned. Project planning activities include those tasks described below as well as identifying data needs, developing a work plan, designing a data collection program and quality assurance project plan, and identifying health and safety protocols.

E. RI/FS Work Plan and Schedule. Within forty-five(45) days after the effective date of the Settlement Agreement, Respondent shall submit to EPA a detailed Work Plan for the completion of the RI/FS. Available Site-related information, including, but not limited to, a revised Conceptual Site Model ("CSM"), existing sampling data, information on the historical use of the Site and other material that help determine the fate and transport of contaminants at the Site, will be used for planning the RI/FS Work Plan. The RI/FS Work Plan shall include, among other things, a detailed schedule for RI/FS activities at the Site. The schedule shall provide for the completion of the RI/FS within eighteen (18) months of EPA approval of the RI/FS Work Plan, or as otherwise extended by EPA, with consideration of extenuating circumstances beyond the control of the Respondent. EPA will either approve the RI/FS Work Plan pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, or will provide comments on it. Within twenty-one (21) days of receiving comments from EPA on the RI/FS Work Plan, Respondent shall prepare a revised RI/FS Work Plan that is responsive to the directions in all EPA comments. Respondent shall submit the revised RI/FS Work Plan to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, unless Respondent is directed otherwise by EPA in writing. The RI/FS Work Plan shall include:

1. Quality Assurance/Quality Control Project Plan ("QAPP"), which shall be prepared in accordance with the Uniform Federal Policy for Implementing Quality Systems (UFP-QS), EPA-505-F-03-001, March 2005 or newer, Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), Parts 1, 2 and 3, EPA-505-B-04-900A, B and C, March 2005 or newer, and other guidance documents referenced in the aforementioned guidance documents and which shall include the following elements:

- i. A detailed description of the sampling, analysis, and monitoring that shall be performed during the RI/FS, consistent with this Administrative Order. At a minimum, the QAPP shall provide the following:
- ii. A plan for the delineation of contamination in the surface water;

- iii. A plan for the delineation of contamination in the sediments and
- iv. A plan for the determination of contaminant levels in biota found at the Site.

B. All sampling, analysis, data assessment, and monitoring shall be performed in accordance with the guidance provided at <http://www.epa.gov/fedfac/documents/qualityassurance.htm>, the guidance and procedures located in the EPA Region 2 DESA/HWSB web site: <http://www.epa.gov/region02/qa/documents.htm>, other OSWER directives and EPA Region 2 policies, as appropriate, or an alternate EPA-approved test method, and the guidelines set forth in this Administrative Order. All testing methods and procedures shall be fully documented and referenced to established methods or standards.

- a. The QAPP shall also specifically include the following items:
 - i. An explanation of the way(s) the sampling, analysis, testing, and monitoring will produce data for the RI/FS ;
 - ii. A detailed description of the sampling, analysis, and testing to be performed, including sampling methods, analytical and testing methods, sampling locations and frequency of sampling;
 - iii. A map depicting sampling locations; and
 - iv. A schedule for performance of specific tasks.
- b. In the event that additional sampling locations, testing, and analyses are utilized or required, Respondents shall submit to EPA an addendum to the QAPP for approval by EPA.
- c. In order to provide quality assurance and maintain quality control with respect to samples to be collected, Respondents shall ensure the following:

- i. Quality assurance and chain-of-custody procedures shall be performed in accordance with standard EPA protocol and guidance, including the guidance provided in the EPA Region 2 Quality Assurance Homepage, and the guidelines set forth in this Order.
- ii. The laboratory to be used must be specified. If the laboratory participates in the Contract Laboratory Program ("CLP") for the analysis to be performed for this investigation, then project-specific Performance Evaluation ("PE") samples will not be required, as CLP laboratories run EPA PEs on a quarterly basis. If the proposed laboratory does not participate in the CLP for the analyses required, PE samples must be analyzed to demonstrate the capability to conduct the required analysis prior to being approved for use. Once a non-CLP laboratory has been selected, the laboratory should submit a copy of their Laboratory Quality Assurance Program Plan ("LQAPP") to EPA for review and approval.

For any analytical work performed, including that done in a fixed laboratory, in a mobile laboratory, or in on-site screening analyses, Respondents must submit to EPA a Non-CLP Superfund Analytical Services Tracking System form for each laboratory utilized during a sampling event, within thirty (30) days after acceptance of the analytical results. Upon completion, such documents shall be submitted to the EPA Project Coordinator, with a copy of the form and transmittal letter to:

Regional Sample Control Center Coordinator
U.S. EPA Region 2
Division of Environmental Science &
Assessment
2890 Woodbridge Avenue, Bldg. 209, MS-215
Edison, NJ 08837

- iii. The laboratory utilized for analyses of samples must perform all analyses according to accepted EPA methods as documented in the Contract Lab Program Statement of Work for Organic Analysis, (OLM04.2) or the latest revision, and the Contract Lab Program Statement of Work for Inorganic Analysis, (ILM05.2) or the latest revision, or other EPA approved methods.
- iv. Unless indicated otherwise in the approved QAPP, within 60 days of receipt from the laboratory, all data shall be validated.
- v. Submission of the validation package (checklist, report and Form Is containing the final data) to EPA, prepared in accordance with the provisions of Subparagraph vi., below.
- vi. Assurance that all analytical data that are validated as required by the QAPP are validated according to the procedures stated in the EPA Region II Contract Lab Program Organics Data Review and Preliminary Review (SOP #HW-6, Revision 12), dated March 2001, or the latest revision, and the "Evaluation of Metals Data for the Contract Laboratory Program (SOP #HW-2, Revision 11), dated January 1992 or the latest revision, or EPA-approved equivalent procedures. Region 2 Standard Operating Procedures are available at:
<http://www.epa.gov/region02/desa/hsw/sops.htm>
- vii. Unless indicated otherwise in the QAPP, Respondents shall require deliverables equivalent to CLP data packages from the laboratory for analytical data. Upon EPA's request, Respondents shall submit to EPA the full documentation (including raw data) for this analytical data. EPA reserves the right to perform an independent data validation, data validation check, or qualification check on generated data.

viii. Respondents shall insert a provision in their contract(s) with the laboratory utilized for analyses of samples, which will require granting access to EPA personnel and authorized representatives of the EPA for the purpose of ensuring the accuracy of laboratory results related to the Site.

ix. Respondents shall provide for electronic submittal of sampling and geologic data in accordance with R2 policies, guidelines, and formats. The R2 Electronic Data Deliverable (EDD) is a standardized format for all electronic submittals to EPA Region 2. The most recent EDD Guidance and Requirements can be found at:
<http://www.epa.gov/region02/superfund/medd.htm>.

3. A Health and Safety Plan ("HSP"), which shall conform to 29 CFR §1910.120, "OSHA Hazardous Waste Operations Standards," and the EPA guidance document, "Standard Operating Safety Guidelines" (OSWER, 1992).

4. A Data Management Plan ("DMP"), shall identify the protocol for managing databases and geographic information systems ("GIS") data, and shall assimilate and integrate the historical data and field data. The database system shall comply with the EPA standard-electronic format, following the instruction provided in the "Electronic Data Deliverable Specification Manual, Version 2.1" (or the latest revision), unless an alternate format is proposed by the Respondents' and accepted by the EPA.

5. Green Strategy plan for implementing the Work. The strategy should follow EPA Region 2's Clean and Green Policy which may be found at
<http://www.epa.gov/region02/superfund/green remediation/policy.html>

F. Following approval of the RI/FS Work Plan, or modification pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, the RI/FS Work Plan shall be deemed to be incorporated into this Settlement Agreement by reference.

III. Task II - Removal Action

A. Respondent has proposed conducting a removal action at the Site to address immediate concerns. This action will be described in a draft Engineering Evaluation/Cost Analysis ("EE/CA") which will be submitted within six (6) months of the effective date of the Settlement Agreement. The draft EE/CA will evaluate the levels of contamination in the berms of the former wastewater lagoon and in the area of the former wastewater lagoon identified as Area 3 on the map in Appendix B of the Settlement Agreement and will consider alternatives to address that material prior to completion of the RI/FS for the Site. EPA will provide comments on the draft EE/CA, pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement. Within thirty (30) days of receiving comments from EPA on the draft EE/CA, Respondent shall prepare a revised EE/CA that is responsive to the directions in all EPA comments. Respondent shall submit the revised EE/CA to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, unless Respondent is directed otherwise by EPA in writing.

After the EE/CA is approved by EPA, EPA will provide the public an opportunity to comment on the proposed Removal Action. After EPA considers the public comment, EPA will then prepare an Action Memorandum to memorialize the decision.

B. Removal Action Design Plan. Within forty-five (45) days after EPA signs the Action Memorandum, Respondent shall submit a draft Removal Action Design Plan, for the work described in Sections III.A. above, for EPA review and approval pursuant to Section XI of the Settlement Agreement (EPA Approval of Reports and Submissions). EPA will provide comments on the draft Removal Action Design Plan, pursuant to Section XI of the Settlement Agreement. Within thirty (30) days of receiving comments from EPA on the draft Removal Action Design Plan, Respondent shall prepare a revised Removal Action Design Plan that is responsive to the directions in all EPA comments. All work, as described above, shall be conducted in accordance with the approved Removal Action Design Plan. Upon approval of the Removal Action Design Plan, Respondent will implement the Removal Action Design Plan in accordance with the schedule contained therein. Upon approval by EPA, the Remedial Action Design Plan shall be deemed incorporated into and an enforceable part of the Settlement Agreement.

C. Final Report.. Within thirty (30) days after completion of the Removal Action activities described above, Respondent shall submit for EPA review and approval pursuant to Section XI of the Settlement Agreement (EPA Approval of Plans and Other Submissions) a Final Report summarizing the removal work completed at the Site and any plans for continued Operation and Maintenance of the completed actions. The Final Report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports, ." and EPA guidance entitled ["Superfund Removal Procedures: Removal Response Reporting - POLREPS and OSC Reports" (OSWER Directive No. 9360.3-03, June 1, 1994), or subsequently issued guidance.]

The Final Report shall included a good faith estimate of total costs or a statement of actual costs incurred in performing the removal action, a listing of quantities and types of materials removed off-site or handled on-site, a discussion of removal and disposal options considered for those materials, a listing of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contacts, and permits). The Final Report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

"Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

IV. TASK III - COMMUNITY RELATIONS

EPA will develop a Site-specific community relations plan and make revisions to this plan as necessary and in accordance with EPA guidance and the NCP. To the extent requested by EPA, Respondent shall provide information relating to the work required hereunder to the public. As requested by EPA, Respondent shall participate in the preparation of appropriate information disseminated to the public; and participate in

public meetings, which may be held or sponsored by EPA, to explain activities at or concerning the Site.

V. TASK IV - SITE CHARACTERIZATION (RI/FS Guidance, Chapter 3)

Following EPA's written approval or modification of the RI/FS Work Plan, pursuant to Section XI of the Settlement Agreement, the Respondent shall implement the provisions of the RI/FS Work Plan to characterize the nature, quantity, and concentrations of hazardous substances, pollutants, or contaminants in connection with the Site. Respondent shall provide EPA with validated analytical data within sixty (60) days of each sampling activity, in the electronic format required by EPA at the time of submission, showing the locations, media and results. Within seven (7) days of completion of field activities, Respondent shall so advise EPA in writing. Within forty-five (45) days of submission to EPA of the final set of validated data, Respondent shall submit to EPA an OU2 Site Characterization Summary Report. Within thirty (30) days after Respondent's submittal of the OU2 Site Characterization Summary Report, or such longer time as specified in writing by EPA, Respondent shall make a presentation to EPA and the State on the findings of the OU2 Site Characterization Summary Report and discuss EPA's preliminary comments and concerns associated with the OU2 Site Characterization Summary Report. EPA may then elect to provide comments on the OU2 Site Characterization Summary Report, in which case Respondent shall amend and submit to EPA a revised OU2 Site Characterization Summary Report that is responsive to the directions in all of EPA's written comments, within twenty-one (21) days of receipt of EPA's comments.

A. As part of the RI, the Respondent shall perform the activities described in this task, including the preparation of site characterization summaries and RI report. The overall objective of site characterization is to describe areas of the Site that may pose a threat to human health or the environment. This is accomplished by first determining the Site's physiography, geology, and hydrology. Surface and subsurface pathways of migration will be defined. The Respondent shall identify the sources of contamination and characterize the nature, extent, and volume of the sources of contamination, including their physical and chemical constituents as well as their concentrations at incremental locations to background in the affected media. Using this information, contaminant fate and transport is then estimated. The above information should

be used to update the Conceptual Site Model for the Site, which shall be included in the OU2 Site Characterization Summary Report.

B. During this phase of the RI/FS, the QAPP and HSP are implemented. Field data are collected and analyzed to provide the information required to accomplish the objectives of the study. The Respondent shall notify EPA at least two weeks in advance of the field work regarding the planned dates for field activities, including ecological field surveys, geophysical surveys, excavation, installation of wells, initiating sampling, installation and calibration of equipment, pump tests, and initiation of analysis and other field investigation activities.

The Respondent shall demonstrate that the laboratory and type of laboratory analyses that will be utilized during characterization of the Site meet the specific QA/QC requirements and the Data Quality Objectives ("DQOs") of the Site investigation as specified in the QAPP. Given that several iterations of sampling have occurred previously at the Site, it is not expected that additional phases of field work should be required. If additional activities are required to satisfy the objectives of the RI/FS it may be necessary for the Respondent to modify the work specified in the initial Work Plan. In addition to the deliverables below, the Respondent shall provide a monthly progress report and participate in meetings with EPA at major milestones in the RI/FS process.

1. Field Investigation

The field investigation includes the gathering of data to define the Site's physical and biological characteristics, sources of contamination, the nature and extent of contamination, and the fate and transport of contamination at the Site. These activities shall be performed by the Respondent in accordance with the RI/FS Work Plan and QAPP. The initial tasks of the investigation will be selected based on the results of the data collection and review described in Section II.C of this SOW. Additional investigatory tasks will then be conducted, as necessary, to characterize Site-related contamination to the extent necessary to select an appropriate remedy. At a minimum, the Field Investigation shall address the following:

a. Implement and Document Field Support Activities.

The Respondent shall initiate field support activities following approval of the RI/FS Work Plan and QAPP. Field support activities may include scheduling, and procuring equipment, office space, laboratory services, and/or contractors. The Respondent may initiate other time critical field support activities, such as obtaining access to relevant properties and determining substantive permit requirements for field activities, prior to approval of the RI/FS Work Plan and QAPP.

The Respondent shall provide EPA with reasonable notice prior to initiating field support activities so that EPA may adequately schedule oversight tasks. The Respondent shall also notify EPA in writing upon completion of field support activities.

b. Investigate and Define Site Physical and Biological Characteristics

The Respondent shall collect additional data, as necessary, on the physical and biological characteristics of the Site and its surrounding areas including the physical physiography, geology, and hydrology, and specific physical characteristics identified in the Work Plan. This information will be ascertained through a combination of physical measurements, observations, and sampling efforts and will be utilized to define potential transport pathways and human and ecological receptor populations. In defining the physical characteristics of the Site, the Respondent shall also obtain sufficient engineering data for the projection of contaminant fate and transport, and development and screening of remedial action alternatives, including information to assess treatment technologies.

c. Define Sources of Contamination

The Respondent shall locate each source of contamination. For each location, the areal extent and depth of contamination shall be determined by sampling at incremental depths. The physical characteristics and chemical constituents and their concentrations will be determined for all known and discovered sources of contamination. The Respondent shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QA/QC plan and DQOs.

Defining the source of contamination will include analyzing the potential for contaminant release (e.g., long term leaching from soil, vapor intrusion into homes), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies.

d. Describe the Nature and Extent of Contamination

The Respondent shall gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the Respondent shall utilize the information on the Site's physical and biological characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The Respondent shall then implement an iterative monitoring program and any study program identified in the RI/FS Work Plan (which includes the QAPP) such that by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the Site can be determined.

In addition, the Respondent shall gather data for calculations of contaminant fate and transport. This process is continued until the area and depth of contamination are known to the level of contamination established in the QA/QC plan and DQOs. EPA will use the information on the nature and extent of contamination to determine the

level of risk presented by the Site. Respondent shall use this information to help to determine aspects of the appropriate remedial action alternatives to be evaluated.

2. Data Analysis

Evaluate Site Characteristics

The Respondent shall analyze and evaluate the data to describe: (1) physical and biological characteristics at the Site, (2) contaminant source characteristics, (3) nature and extent of contamination and (4) contaminant fate and transport. Results of the Site's physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The evaluation will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to EPA in a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA together with a sensitivity analysis. The Respondent shall agree to discuss any data gaps identified by the EPA and then collect data that are necessary to complete the baseline risk assessment. (See "Guidance for Data Useability in Risk Assessment" - Publication # 9285.7-09A, April 1992.) Also, this evaluation shall include any information relevant to characteristics of the Site necessary for evaluation in the baseline risk assessment of the need for remedial action and for the development and evaluation of remedial alternatives. (See Risk Evaluation of Remedial Alternatives (Part C) - OSWER Directive 9285.7-01C, December 1991.) Analysis of data collected for characterization of the Site will meet the DQOs developed in the QA/QC plan (or revised during the RI).

3. Data Management Procedures

The Respondent shall consistently document the quality and validity of field and laboratory data compiled during the RI.

a. Document Field Activities

Information gathered during characterization of the Site will be consistently documented and adequately recorded by the Respondent in well maintained field logs and laboratory reports. The method(s) of documentation must be specified in the Work Plan and QAPP. Field logs or dedicated field log-books must be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies.

b. Maintain Sample Management and Tracking

The Respondent shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated, or in the case of data collected prior to the date of this Order, otherwise approved, analytical data are reported and utilized in the evaluation of remedial alternatives. Analytical results developed under the Work Plan will not be included in the site characterization reports for the Site unless accompanied by, or cross-referenced to, a corresponding QA/QC report. In addition, the Respondent shall safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.

4. Site Characterization Summary

As described in the beginning of this Section of the SOW, Respondent shall prepare a concise OU2 Site Characterization Summary Report. This report will review the investigative activities that have taken place, and describe and display data from the Site documenting the location and characteristics of surface and subsurface features and contamination at the Site including the affected medium, location, physical state, concentration of contaminants and quantity. In addition, the location, approximate dimensions, physical condition and varying concentrations of each contaminant throughout each source and the extent of contaminant migration through each of the affected media will be documented. The site characterization summaries for the Site will provide EPA with a preliminary reference for the development of the risk assessment, and evaluation of the development and screening of remedial alternatives and the refinement and identification of Applicable or Relevant and Appropriate Requirements ("ARARs").

5. Fate and Transport Model Memorandum

Within thirty (30) days of approval of the OU2 Site Characterization Summary Report, Respondent shall submit a memorandum on fate and transport modeling. The memorandum should include discussions of why such modeling would be useful in understanding the fate and transport of contaminants at the Site, or alternatively, demonstrate that such modeling is unnecessary. This memorandum shall discuss how modeling would help the understanding of how contaminants in the groundwater in Area 1 is impacting the sediment and surface waters (and subsequently the biota in Area 4), the fate and transport of contaminants in sediment and surface water on the Site, and the biouptake of contaminants from sediment and surface water on the Site. EPA may provide comments on the submitted memorandum, in which case Respondent shall amend and submit to EPA a revised memorandum which is responsive to the directions in all EPA comments within thirty (30) days of receipt of EPA's comments.

6. Reuse Assessment

At EPA's request, Respondent shall perform a Reuse Assessment. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site. Respondent shall prepare the Reuse Assessment in accordance with EPA guidance including, but not limited to, "Reuse Assessment: A Tool to Implement the Superfund Land Use Directive, OSWER Directive 9355.7-06P, June 4, 2001, or subsequently issued guidance. EPA may provide comments on the submitted Reuse Assessment, in which case Respondent shall amend and submit to EPA a revised assessment which is responsive to the directions in all EPA comments within thirty (30) days of receipt of EPA's comments.

VI. TASK V - IDENTIFICATION OF CANDIDATE TECHNOLOGIES

An Identification of Candidate Technologies Memorandum shall be submitted by Respondent within forty-five (45) days of Respondent's submission to the EPA of the OU2 Site Characterization Summary Report. The candidate technologies identified shall include innovative treatment technologies (as defined in the RI/FS Guidance) where appropriate. The listing of candidate technologies will cover the range of technologies required for alternatives analysis. EPA may provide comments on the submitted memorandum, in which case Respondent shall amend and submit to EPA a revised memorandum which is responsive to the directions in all EPA comments within twenty-one (21) days of receipt of EPA's comments.

VII. TASK VI - TREATABILITY STUDIES; AS NECESSARY

Treatability testing will be performed by the Respondent, as necessary as determined by EPA, to assist in the detailed analysis of alternatives. In addition, if applicable, testing results and results and operating conditions will be used in the detailed design of the selected remedial technology. The following activities will be performed by the Respondent.

A. Conduct Literature Survey and Determine the Need for Treatability Testing

The Respondent shall conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. If practical candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated, or cannot be adequately evaluated for this Site on the basis of available information, treatability testing will be conducted.

B. Evaluate Treatability Studies

Once a decision has been made to perform treatability studies, the Respondent and EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing should be made as early in the process as possible to minimize potential delays of the FS.

C. Treatability Testing and Deliverables

The deliverables that will be required if treatability testing is conducted, in addition to the memorandum identifying candidate technologies, shall include a treatability testing Work Plan, a sampling and analysis plan, and a final treatability evaluation report. EPA may also require a treatability study health and safety plan, where appropriate.

If EPA determines that treatability testing is required and so notifies Respondent in writing, Respondent shall, within thirty (30) days thereafter, submit to EPA a Treatability Testing Work Plan.

D. Treatability Testing Work Plan

Within thirty (30) days of EPA's determination that treatability testing is necessary, Respondent shall submit a Treatability Testing Work Plan, including a schedule. EPA will either approve of the Treatability Testing Work Plan pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, or will provide comments on the plan. Within thirty (30) days of receiving EPA's comments on the Treatability Testing Work Plan, Respondent shall prepare a revised plan that is responsive to the directions in all EPA comments. Respondent shall submit the revised Treatability Study Work Plan to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, unless Respondent is directed otherwise by EPA in writing. Upon its approval by EPA, said work plan and schedule shall be deemed incorporated into this Settlement Agreement by reference.

The Treatability Testing Work Plan shall describe the background of the Site, remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The DQOs for treatability testing should be documented as well. If pilot scale treatability testing is to be performed, the pilot-scale Work Plan will describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a detailed health and safety plan. If testing is to be performed off-Site for the Site, the Respondent shall address all necessary permitting requirements to the satisfaction of appropriate authorities.

E. Treatability Study QAPP

If the original QAPP is not adequate for defining the activities to be performed during the treatability test, a separate treatability study QAPP, or amendment to the original QAPP for the Site, will be prepared by the Respondent for EPA review and approval, and will

be submitted at the same time as the Treatability Study Work Plan.

EPA will either approve of the revised QAPP pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, or will provide comments on the plan. Within twenty-one (21) days of receiving EPA's comments on the Treatability Study QAPP, Respondent shall prepare a revised QAPP that is responsive to the directions in all EPA comments. Respondent shall submit the revised Treatability Study QAPP to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, unless Respondent is directed otherwise by EPA in writing.

F. Treatability Study Health and Safety Plan

If the original HSP is not adequate for defining the activities to be performed during the treatment tests, a separate or amended health and safety plan shall be developed by the Respondent and submitted for EPA review and comment, and shall be submitted at the same time as the Treatability Study Work Plan. Task II of this SOW provides additional information on the requirements of the HSP. EPA does not "approve" the treatability study HSP.

G. Treatability Study Evaluation Report

Within forty-five (45) days of completion of any treatability testing, Respondent shall submit a Treatability Study Evaluation Report to EPA. EPA may provide comments on the report, in which case Respondent shall amend and submit to EPA a revised Treatability Study Evaluation Report which is responsive to the directions in all EPA comments, within thirty (30) days of receiving EPA's comments.

Following completion of treatability testing, the Respondent shall analyze and interpret the testing results in a technical report to EPA. Depending on the sequences of activities, this report may be a part of the RI/FS report or a separate deliverable. The report will evaluate each technology's effectiveness,

implementability, cost and actual results as compared with predicted results. The report will also evaluate full scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

VIII. TASK VII - BASELINE RISK ASSESSMENT

Respondent shall prepare a Baseline Risk Assessment for the Site which shall be incorporated by the Respondent into the RI. Respondent shall provide EPA with the following deliverables:

A. Baseline Human Health Risk Assessment ("BHHRA")

1. Actual and potential cancer risks and non-cancer hazards to human health shall be identified and characterized in accordance with CERCLA, the NCP, and EPA guidances including, but not limited to, the RI/FS Guidance, "Land Use in the CERCLA Remedy Selection Process" (OSWER Directive No. 9355.7-04) and the definitions and provisions of "Risk Assessment Guidance for Superfund ("RAGS")" Volume 1, "Human Health Evaluation Manual," (December 1989) (EPA/540/1-89/002). Other EPA guidance to be used in the development of risk assessments is provided in Attachment 1 to this SOW.
2. Representative contaminants and associated concentrations in media including groundwater, soil, sediment, and surface water for the BHHRA shall be determined utilizing all currently available media-specific analytical data generated during the RI/FS.
3. Memorandum on Exposure Scenarios and Assumptions. Within sixty (60) days after approval or modification of the RI/FS Work Plan pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, Respondent shall submit a memorandum describing the exposure scenarios and assumptions, taking

into account for the BHHRA the present and reasonably anticipated future land use of the Site. The memorandum should include appropriate text describing the conceptual Site model and exposure routes of concern for the Site, and include a completed RAGS Part D Table 1. This table shall describe the pathways that will be evaluated in the BHHRA, the rationale for their selection, and a description of those pathways that will not be evaluated. In addition, the Memorandum shall include a completed RAGS Part D Table 4 describing the exposure pathway parameters with appropriate references to EPA's 1991 Standard Default Assumptions and updated guidance developed by EPA. EPA may provide comments on the memorandum, in which case Respondent shall amend and submit to EPA a revised memorandum that is responsive to the directions in all EPA comments, within twenty-one (21) days of receiving EPA's comments.

4. Pathway Analysis Report ("PAR"). The Respondent shall prepare and submit a PAR within sixty (60) days after receipt of the last set of validated data. The PAR shall be developed in accordance with OSWER Directive 9285.7-01D dated January 1998 (or more recent version), entitled, "*Risk Assessment Guidelines for Superfund Part D*" and other appropriate guidance in Attachment 1 and updated thereto. The PAR shall contain all the information necessary for a reviewer to understand how the risks at the Site will be assessed. The PAR will build on the Memorandum on Exposure Scenarios and Assumptions (see C above) describing the risk assessment process and how the risk assessment will be prepared. The PAR shall include completed RAGS Part D Tables 2, 3, 5, and 6 as described below. EPA may provide comments on the PAR, in which case Respondent shall amend and submit to EPA a revised PAR that is responsive to the directions in all of EPA's written comments within thirty (30) days of receipt of EPA's comments. The PAR must be reviewed and approved by EPA prior to the

submission of the draft BHHRA. The following information shall be included in the PAR:

- a. Chemicals of Concern ("COC"). The PAR shall contain all the information necessary for a reviewer to understand how the risks for OU2 will be evaluated.
 - i. Based on the results of the Site Characterization Summary Report the Respondent shall list the hazardous substances present in all sampled media (e.g., groundwater, soils, sediment, etc.) and the contaminants of potential concern ("COPCs") as described in RAGS Part A.
 - ii. Table 2 - Selection of COCs. Representative contaminants and associated concentrations in sample media for the PAR shall be determined utilizing all currently available media-specific validated analytical data generated during the RI/FS. The selection of COCs shall follow RAGS Part A and before chemicals are deleted as COCs they shall be evaluated against the residential PRGs from Region IX. The COCs shall be presented in completed RAGS Part D Table 2 format.
- b. Table 3 - Media Specific Exposure Point Concentrations. Using the chemicals selected in Table 2, this Table shall summarize the Exposure Point Concentrations for all COCs for the various media. The calculation of the Exposure Point Concentration shall follow the 1992 Guidance Document on the calculation of the 95% Upper Confidence Limit ("UCL") on the Mean. In those cases where the 95% UCL exceeds the mean the maximum concentration shall be used as the EPC.

c. Tables 5 and 6 - Toxicological Information. This section of the PAR shall provide the toxicological data (e.g., Cancer Slope Factors, Reference Doses, Reference Concentrations, Weight of Evidence for Carcinogens, and adjusted dermal toxicological factors where appropriate) for the chemicals of concern. The toxicological data shall be presented in completed RAGS Part D Tables 5 and 6. The sources of data in order of priority are: EPA's Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST)-1997 and contact with EPA's National Center for Environmental Assessment. To facilitate a timely completion of the PAR, the Respondent shall submit a list of chemicals for which IRIS values are not available to EPA as soon as identified thus allowing EPA to facilitate obtaining this information from EPA's National Center for Environmental Assessment.

5. Baseline Human Health Risk Assessment of the RI Report. Within sixty (60) days of EPA's approval of the PAR, the Respondent shall submit to EPA a Draft BHHRA for inclusion in the RI. The submittal shall include completed RAGS Part D Tables 7 through 10 summarizing the calculated cancer risks and non-cancer hazards and appropriate text in the risk characterization with a discussion of uncertainties and critical assumptions (e.g., background concentrations and conditions). The Respondent shall perform the BHHRA in accordance with the approach and parameters described in the Memorandum of Exposure Scenarios and Assumptions and the PAR, as described above. Text and tables from these reports previously reviewed by EPA shall be included in the appropriate sections of the BHHRA.

EPA may provide comments on the draft BHHRA, in which case Respondent shall amend and submit to

EPA a revised report that is responsive to the directions in all EPA comments, within 30 days of receiving EPA's comments. The revised BHHRA shall be incorporated into the RI report.

B. Baseline Ecological Risk Assessment

1. Within sixty (60) days after receipt of the last set of validated data, the Respondent shall submit a Screening-Level Ecological Risk Assessment ("SLERA") in accordance with current Superfund ecological risk assessment guidance (Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments [ERAGS], USEPA, 1997 [EPA/540-R-97-006], OSWER Directive 9285.7-25, June 1997)). The SLERA shall include a comparison of the maximum contaminant concentrations in each media of concern to appropriate conservative ecotoxicity screening values, and should use conservative exposure estimates. EPA will review the SLERA and determine whether a full Baseline Ecological Assessment is required. EPA may provide comments on the SLERA, in which case Respondent shall amend and submit to EPA a revised SLERA that is responsive to the directions in all EPA comments, within thirty (30) days of receiving EPA's comments.
2. If EPA determines that a full Baseline Ecological Risk Assessment ("BERA") is required, and so notifies Respondent in writing, Respondent shall, within thirty (30) days thereafter, submit a Scope of Work outlining the steps and data necessary to perform the BERA, including any amendments to the RI/FS Work Plan required to collect additional relevant data. If EPA provides comments on the BERA Scope of Work, Respondent shall amend and submit to EPA a revised BERA Scope of Work that is responsive to the directions in all of EPA's written comments within thirty (30) days of receipt of EPA's comments. The BERA Scope of Work shall identify

any RI/FS Work Plan amendments or addenda, including establishment of a schedule for review and approval of additional field work, subject to EPA approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement.

3. Respondent shall notify EPA in writing within seven (7) days of completion of all field activities associated with the BERA, as identified in the BERA Scope of Work and performed under the approved RI/FS Work Plan addenda. Within sixty (60) days of receipt of the final set of BERA-related validated data, Respondent shall submit a draft BERA to EPA. Actual and potential ecological risks shall be identified and characterized in accordance with CERCLA, the NCP, and EPA guidance including, but not limited to, "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments," (1997) (EPA/540-R-97-006), ERAGS, dated June 5, 1997 (or most recent guidance). Respondent shall submit to EPA a BERA section for inclusion in the RI Report. EPA may provide comments on the draft BERA, in which case Respondent shall amend and submit to EPA a final, updated ecological assessment that is responsive to the directions in all EPA comments. The Respondent shall evaluate and assess the risk to the environment posed by Site contaminants.
4. The draft BERA Report shall include the following sections:
 - a. Hazard Identification (sources). The Respondent shall review available information on the hazardous substances present at the Site and identify the major contaminants of concern.
 - b. Dose-Response Assessment. The Respondent shall identify and select COCs based on their intrinsic toxicological properties.

- c. Characterization of Site and Potential Receptors. The Respondent shall identify and characterize environmental exposure pathways.
- d. Select Chemicals, Indicator Species, and End Points. In preparing the assessment, the Respondent shall select representative chemicals, indicator species (species which are especially sensitive to environmental contaminants), and end points on which to concentrate.
- e. Exposure Assessment. The exposure assessment shall identify the magnitude of actual or environmental exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondent shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the Site.
- f. Toxicity Assessment/Ecological Effects Assessment. The toxicity and ecological effects assessment shall address the types of adverse environmental effects associated with chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity (e.g., weight of evidence for a chemical's carcinogenicity).
- g. Risk Characterization. During risk characterization, chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, shall be compared to measured

levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the Site are affecting or could potentially affect the environment.

- h. Identification of Limitations/ Uncertainties. The Respondent shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.
- i. Site Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondent shall revise the CSM discussed in Section II.F. of this SOW, as appropriate.

- 5. Final Ecological Risk Assessment Report. Within forty-five (45) days of receiving EPA's comments on the draft BERA, the Respondent shall amend and submit to EPA a final report which is responsive to the directions in all EPA comments.

IX. TASK VIII - REMEDIAL INVESTIGATION REPORT

The Respondent shall prepare a Remedial Investigation (RI) Report that accurately establishes the Site characteristics such as the contaminated media, extent of contamination, and the physical boundaries of the contamination. This report shall summarize results of field activities to characterize the Site, sources of contamination, and the fate and transport of contaminants. Pursuant to this objective, the Respondent shall obtain only the minimum essential amount of detailed data necessary to determine the key contaminants movement and extent of contamination. The key contaminants must be selected based on persistence and mobility in the environment and the degree of hazard. The Respondent shall use existing standards and guidelines such as drinking water standards, water quality criteria, and other criteria accepted by EPA as appropriate for

the situation that will be used to evaluate effects on human receptors who may be exposed to the key contaminants above appropriate standards or guidelines.

The RI Report shall be written in accordance with the "Guidance for Conducting Remedial Investigations/Feasibility Studies under CERCLA, OSWER Directive 9355.3-01, October 1988, Interim Final (or latest revision), "Guidance for Data Usability in Risk Assessment, (EPA/540/G-90/008), September 1990 (or latest revision), and any other relevant guidance documents.

A. Draft Remedial Investigation Report

In accordance with the schedule in the approved RI/FS Work Plan, the Respondent shall submit a draft RI report that is consistent with RI/FS Guidance. The Respondent shall refer to the RI/FS Guidance for an outline of the report format and contents.

B. Final Remedial Investigation Report

Within thirty (30) days, or a later timeframe agreed to by EPA, of receiving EPA's comments on the Draft RI Report, the Respondent shall amend and submit to EPA a final report which is responsive to the directions in all EPA comments, pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement.

X. TASK IX - DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES

Concurrent with the RI Site Characterization task (Task IV of this SOW), the Respondent shall begin to develop and evaluate a range of appropriate waste management options that at a minimum ensure protection of human health and the environment. The development and screening of remedial alternatives shall develop an appropriate range of waste management options that will be evaluated. This range of alternatives should include options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and

containment; and a no-action alternative. The following activities will be performed as a function of the development and screening of remedial alternatives.

A. Development and Screening of Remedial Alternatives

1. Develop General Response Action

The Respondent shall develop general response actions for each medium of interest defining containment, treatment, excavation, pumping, or other actions, singly or in combination to satisfy the remedial action objective.

2. Identify Areas or Volumes of Media

The Respondent shall identify areas or volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the Site will also be taken into account.

3. Assemble and Document Alternatives

The Respondent shall assemble selected representative technologies into alternatives for each affected medium or operable unit.

Together, all of the alternatives will represent a range of treatment and containment combinations that will address the Site as part of the overall Site remedy. A summary of the assembled alternatives and their related action-specific ARARS will be prepared by the Respondent for inclusion in a technical memorandum.

The reasons for eliminating alternatives during the preliminary screening process must be specified.

4. Refine Alternatives

The Respondent shall refine the remedial alternatives to identify contaminant volume addressed by the proposed process and sizing of critical unit operations as necessary. Sufficient information will be collected for an adequate comparison of alternatives. PRGs for each chemical in each medium will also be modified as necessary to incorporate any new risk assessment information presented in the BERA. Additionally, action-specific ARARs will be updated as the remedial alternatives are refined.

5. Conduct and Document Screening Evaluation of each Alternative

The Respondent may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives will be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable.

B. Development and Screening of Alternatives Deliverables

Within forty-five (45) days after EPA's approval of the Risk Assessments, or within 45 days after EPA's approval of Respondent's Treatability Study Evaluation report (if treatability studies are undertaken), whichever is later, Respondent shall: (1) make a presentation to EPA identifying the remedial action objectives and summarizing the development and preliminary screening of remedial alternatives, and (2) prepare and submit a Development and Screening of Remedial Alternatives Technical Memorandum summarizing the work performed in, and the results of, each

task above, including an alternatives array summary. The memorandum shall also summarize the reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening. The memorandum shall also provide an explanation for choosing any institutional or engineering controls as part of any remedial alternative, and the level of effort that will be required to secure, maintain, and enforce the control. EPA may elect to comment on the memorandum. If required by EPA's comments, the remaining alternatives will be modified by the Respondent to assure that a complete and appropriate range of viable alternatives are identified and considered in the detailed analysis. This deliverable will document the methods, rationale, and results of the alternatives screening process.

C. Detailed Analysis of Remedial Alternatives

The detailed analysis will be conducted by the Respondent to provide EPA with the information needed to allow for the selection of a remedy for the Site. This analysis is the final task to be performed by Respondent during the FS.

1. Detailed Analysis of Alternatives

The Respondent shall conduct a detailed analysis of alternatives which will consist of an analysis of each option against a set of nine evaluation criteria and a comparative analysis of all options using the same evaluation criteria as a basis for comparison.

2. Apply nine criteria and document analysis

The Respondent shall apply nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or

resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State (or support agency) acceptance; and (9) community acceptance.

For each alternative, the Respondent should provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative, and (2) a discussion of the individual criterion assessment. If the Respondent does not have direct input on criteria (8) State (or support agency) acceptance and (9) community acceptance, these will be addressed by EPA.

3. Compare Alternatives Against Each Other and Document the Comparison of Alternatives

The Respondent shall perform a comparative analysis between the remedial alternatives. That is, each alternative will be compared against the others using the evaluation criteria as a basis of comparison. Identification and selection of the preferred alternative are reserved by EPA. The Respondent shall prepare a technical memorandum summarizing the results of the comparative analysis.

XI. TASK X - FEASIBILITY STUDY REPORT

A. The Respondent shall prepare a Feasibility Study ("FS") Report consisting of a detailed analysis of and a cost-effectiveness analysis, in accordance with the NCP, 40 CFR Part 300, as well as the most recent guidance. Within forty-five (45) days of the Task IX presentation to EPA, Respondent shall submit to EPA a Draft FS Report which reflects the findings in

the approved BERA. Respondent shall refer to the RI/FS Work Plan and the RI/FS Guidance and the SOW for report content and format. Within fourteen (14) days of submitting the draft FS Report, Respondent shall make a presentation to EPA and the State at which Respondent shall summarize the findings of the draft FS Report and discuss EPA's preliminary comments and concerns associated with the draft FS Report. EPA will either approve of the submittal pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, or will provide comments on the draft FS. Within forty-five (45) days of receiving EPA's comments on the draft FS, Respondent shall prepare a revised FS that is responsive to the directions in all EPA comments. Respondent shall then submit the revised document to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions) of the Settlement Agreement, unless Respondent is directed otherwise by EPA in writing.

B. The FS report shall include the following:

1. Summarize Feasibility Study objectives
2. Summarize remedial objectives
3. Articulate general response actions
4. Identification and screening of remedial technologies
5. Remedial alternatives description
6. Detailed analysis of remedial alternatives
7. Summary and conclusions

The Respondent's technical feasibility considerations shall include the careful study of any problems that may prevent a remedial alternative from mitigating Site problems. Therefore, the site characteristics from the RI must be kept in mind as the technical feasibility of the alternative is studied. Specific items to be addressed are reliability (operation over time), safety, operation and maintenance, ease with which the alternative can be implemented, and time needed for implementation.

ATTACHMENT A

REFERENCES FOR CITATION

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process:

The National Hazardous Substance and Oil Pollution Contingency Plan, 40 CFR 300 *et seq.*

Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA,
U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01

"Contaminated Sediment Remediation Guidance for Hazardous Waste Sites," U.S. EPA, Office of Solid Waste and Emergency Response, December 2005, OSWER Directive No. 9355.0-85

"Clean and Green Policy," U.S. EPA Region 2, Emergency and Remedial Response Division, March 11, 2010. Available at:
[http://www.epa.gov/region02/superfund/green remediation/index.html](http://www.epa.gov/region02/superfund/green%20remediation/index.html)

"Electronic Data Deliverable Comprehensive Specification Manual 1.4," U.S. EPA Region 2, February 2010. Available at:
<http://www.epa.gov/region02/superfund/medd.htm>

Interim Guidance on Potentially Responsible Party Participation in Remedial Investigation and Feasibility Studies, U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.

Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies, U.S. EPA, Office of Waste Programs Enforcement, OSWER Directive No. 9835.3.

A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.

EPA NEIC Policies and Procedures Manual, May 1978, revised November 1984, EPA-330/9-78-001-R.

Data Quality Objectives for Remedial Response Activities, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.

"Uniform Federal Policy for Implementing Quality Systems (UFP-QS)," EPA-505-F-03-001, March 2005

"Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP)," Parts 1, 2 and 3, EPA-505-B-04-900A, B and C, March 2005

Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.

EPA Requirements for QAPPs for Environmental Data Operations, U.S. EPA, Office of Emergency and Remedial Response, QA/R-5, October 1998.

Interim Guidelines and Specifications for Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.

Users Guide to the EPA Contract Laboratory, U.S. EPA, Sample Management Office, August 1982.

Interim Guidance with Applicable or Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.

CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (draft), OSWER Directive No. 9234.1-01 and -02.

Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA, Office of Emergency and Remedial Response, (draft), OSWER Directive No. 9283.1-2.

Draft Guidance on Superfund Decision Documents, U.S. EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.-02

Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part A), EPA/540/1-89/002

Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part B), EPA/540/R-92/003.

Risk Assessment Guidance for Superfund - Volume II Environmental Evaluation Manual, March 1989, EPA/540/1-89/001.

Guidance for Data Useability in Risk Assessment, October, 1990, EPA/540/G-90/008.

Performance of Risk Assessments in Remedial Investigation/ Feasibility Studies (RI/FSS) Conducted by Potentially Responsible Parties (PRPs), August 28, 1990, OSWER Directive No.9835.15.

Risk Evaluation of Remedial Alternatives (Part C), December 1991, OSWER Directive 9285.7-01C.

Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions, April 22, 1991, OSWER Directive No. 9355.0-30.

Supplemental Guidance to RAGS: Calculating the Concentration Term, May 1992, OSWER Directive 9285.7-081.

Health and Safety Requirements Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.

OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).

Interim Guidance on Administrative Records for Selection of CERCLA Response Actions, U.S. EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.

Community Relations in Superfund: A Handbook, U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.03B.

Community Relations During Enforcement Activities And Development of the Administrative Record, U.S. EPA, Office of Programs Enforcement, November 1988, OSWER Directive No. 9836.0-1a.

HUMAN HEALTH RISK ASSESSMENT GUIDANCE DOCUMENTS

Superfund Risk Assessment Guidance

USEPA, 1989, Risk Assessment Guidance for Superfund (RAGS); Volume I Human Health Evaluation Manual Part A. OERR. EPA/540/1-89/002. Available at:
<http://www.epa.gov/superfund/programs/risk/ragsa/index.htm>

USEPA, 1990, Risk Assessment Guidance for Superfund (RAGS); Volume I, Human Health Evaluation Manual, (Part B, Development of Risk-Based Preliminary Remediation Goals) OERR, EPA/540/R-92/003. Available at:
www.epa.gov/superfund/programs/risk/ragsb/index.htm

USEPA, 1991. Risk Assessment Guidance for Superfund (RAGS); Volume I, Human Health Evaluation Manual (Part C, Risk Evaluation of Remedial Alternatives), OSWER Directive 9285.7-01C, December 1991. Available at:
www.epa.gov/superfund/programs/risk/ragsc/index.htm

USEPA, 1995. Land Use in CERCLA Remedy Selection Process.
OSWER Directive No. 9355.7-04.

USEPA, 1996. Revised Policy on Performance of Risk Assessments During Remedial Investigation/Feasibility Studies (RI/FS)

Conducted by Potentially Responsible Parties, OSWER Directive No. 9340.1-02 mistakenly numbered 9835.15c.

USEPA, 1997. Risk Assessment Guidance for Superfund (RAGS); Volume I, Human Health Evaluation Manual, Part D., OERR, Interim Publication No. 9285.7-01D. Available at: www.epa.gov/superfund/programs/risk/ragsd/index.htm

USEPA, 1999. Risk Assessment Guidance for Superfund (RAGS). Volume I, Community Involvement in Superfund Risk Assessments. OSWER 9285.7-01, EPA540-R-98-042, PB-99-96303, March 1999. Available at: [www.epa.gov/superfund/programs/risk/ragsa/c1 ra.pdf](http://www.epa.gov/superfund/programs/risk/ragsa/c1_ra.pdf).

USEPA, 2002. Role of Background in CERCLA Cleanup Program. OSWER Directive No. 9285.6-07P.

Exposure Factors

USEPA, 1991, RAGS Volume I: Human Health Evaluation Manual Supplemental Guidance. Standard Default Exposure Factors. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1992. Supplemental Guidance to RAGS: Calculating the Concentration Term. OSWER 9285.7-081. May 1992.

USEPA, 1997. Exposure Factors Handbook - Final, Office of Health and Environmental Assessment, Washington, D.C. Available at: www.epa.gov/ncea/exposfac.htm.

USEPA, 2007. Guidance for Evaluating the Oral Bioavailability of Metals in Soils for Use in Human Health Risk Assessment. OSWER 9285.7-80. http://www.epa.gov/superfund/health/contaminants/bioavailability/bio_guidance.pdf

Dermal Exposure

USEPA, 1992. Dermal Exposure Assessment: Principles and Applications. OSWER. EPA/600/8-91/011B. January. Available at: <http://www.epa.gov/ncea/dermal.htm>.

USEPA, 1999. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual: (Part E, Supplemental Guidance

for Dermal Risk Assessment) Interim Guidance, OSWER Directive 9285.7-10. Please contact Region II risk assessors to discuss any potential updates to the factors in this guidance.

Toxicity and Chemical Specific Guidance

USEPA, current version. Integrated Risk Information System (IRIS); On-line Service. Available at: www.epa.gov/iris).

USEPA, 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. EPA/600/R-93/C89. July 1993.

USEPA, 1996. PCBs: Cancer dose-response assessment and application to environmental mixtures. EPA/600/P-96/001A. Available at: <http://www.epa.gov/ncea/pcbs.html>.

USEPA, 1997. Health Effects Assessment Summary Tables (HEAST), FY '97 Update. U. S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA/540-F-97-036. July 1997.

USEPA, 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. EPA-600-R-02-013.

USEPA, 2007. Framework for Metals Risk Assessment. EPA/120R-07/001. www.epa.gov/osa.

Risk Characterization Guidance

USEPA 1995. Memorandum from Carole Browner on Risk Characterization, U.S. EPA, February 22, 1995. Available at: <http://www.epa.gov/ordntrnt/ORD/spc/2riskchr.html>.

USEPA, 1995. EPA Risk Characterization Program. Memo from Administrator Carol Browner dated March 21, 1995. Available at: <http://www.epa.gov/ordntrnt/ORD/spc/2riskchr.html>.

Risk Assessment Guidelines and Policies

USEPA, 1986. Risk Assessment Guidelines for Mutagenicity Risk Assessment. 51 Federal Register 34006, September 24, 1986.

USEPA, 1986. Risk Assessment Guidelines for Chemical Mixtures 51 Federal Register 34014, September 24, 1986.

USEPA, 1992. Risk Assessment Guidelines for Exposure Assessment. Federal Register. Available at:

<http://www.epa.gov/nceawww1/exposure.htm>

USEPA, 1995. Neurotoxicity Cancer Guidelines. Federal Register. 60 FR 52-32-52056, October 4, 1995.

USEPA, 1996. Proposed Guidelines for Carcinogen Risk Assessment. EPA/600/P-92/003C. Available from:

[http://www.epa.gov/ORD/WebPubs/carcinogen/.](http://www.epa.gov/ORD/WebPubs/carcinogen/)

USEPA, 1996. Guidelines for Reproductive Toxicity Risk Assessment. EPA/630/R-96/009, September 1996. Available at:

[http://www.epa.gov/ORD/WebPubs/repro/.](http://www.epa.gov/ORD/WebPubs/repro/)

USEPA, 1996. Proposed Guidelines for Carcinogen Risk Assessment. EPA/600/P-92/003C, April 1996. Available at:

<http://www.epa.gov/ORD/WebPubs/carcinogen.>

Data Useability and Quality

USEPA, 1992. Final Guidance on Data Useability in Risk Assessment (Part A), OSWER Directive 9285.7-09A., June 1992. Available at: www.epa.gov/programs/risk/datause/parta.htm.

USEPA, 1992. Guidance for Data Useability in Risk Assessment (Part B), OSWER Directive 9285.7-09B, August 1992. Available at: www.epa.gov/programs/risk/datause/partb.html.

USEPA, 1993. Data Quality Objectives Process for Superfund, Interim Final Guidance. OSWER Publication 93559-01, EPA 540-R-93-071.

Air

USEPA, 1989. Air/Superfund national Technical Guidance Study

Services, Volumes I-IV, EPA 450/1-89/001, 002, 003, 004, July 1989.

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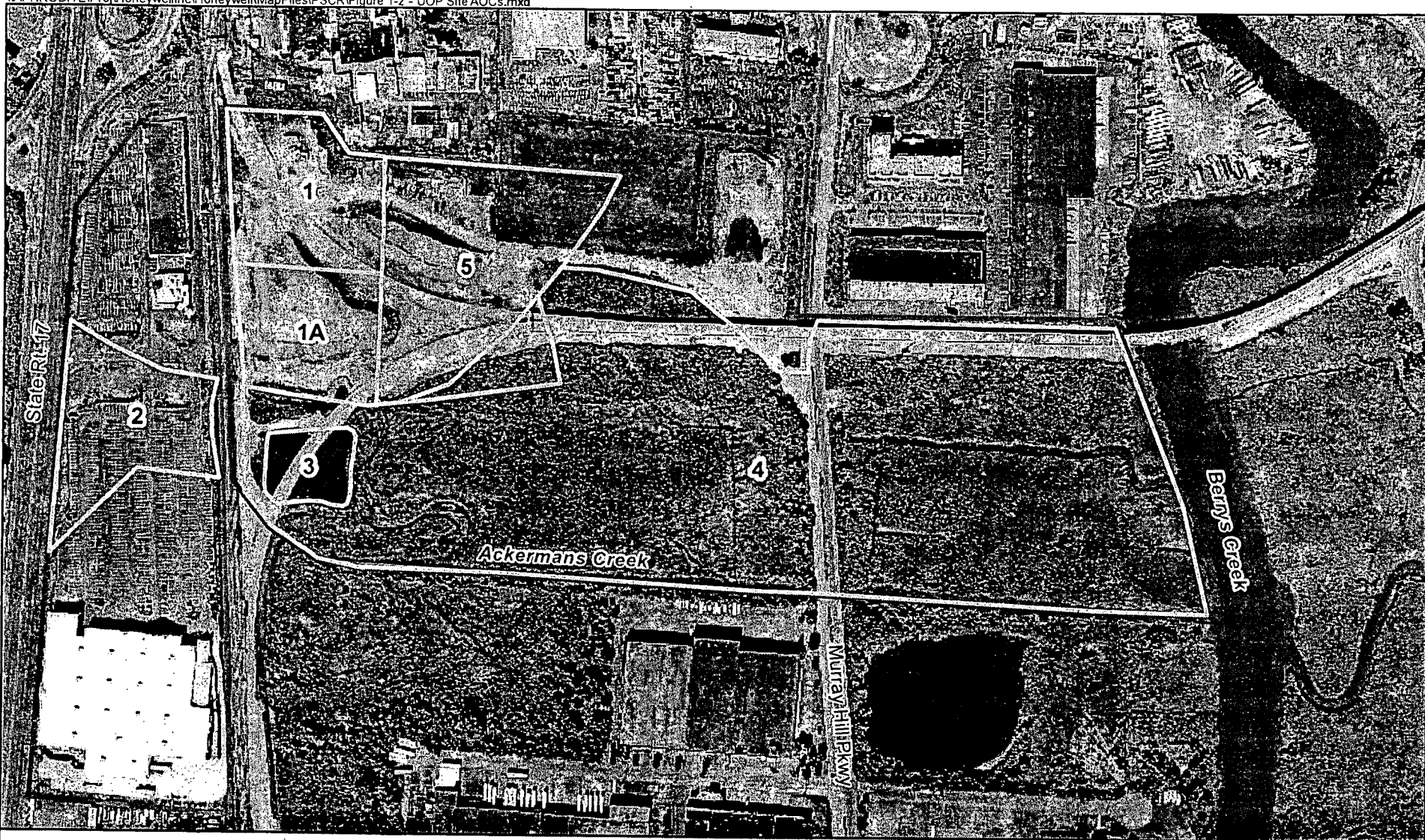
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Legend
 Areas of Concern
 UOP Site Boundary

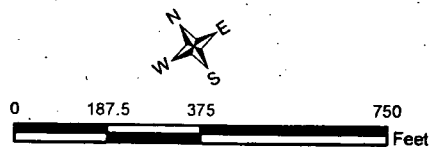


Figure 1-2
 Areas of Concern
 Preliminary Site Characterization Report
 Universal Oil Products (UOP)
 East Rutherford, NJ